STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	1	50

F.A. No. ACNHP-A592(101

INDEX OF SHEETS

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION
FY 2023 PAVEMENT RESTORATION
PROJECT 183–83 KA–5921–01

RUSH COUNTY, KANSAS
CITY OF LA CROSSE
POPULATION 1,231 (2017)
FEDERAL AID PROJECT

PROJECT 183–83 KA–5921–01

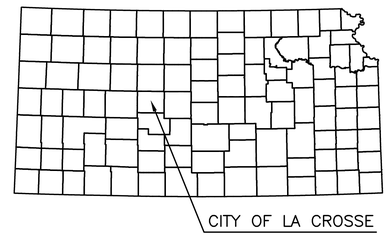
GRADING
CONCRETE PAVEMENT
PAVEMENT MARKING

NOT TO SCALE

STA 352+80.00 END
KDOT PROJECT NO. 183–83 KA–5921–01

STA 349+15.00 BEGIN
KDOT PROJECT NO. 183–83 KA–5921–01

Traffic shall be carried through construction. Access to adjacent property shall be maintained during construction.



DESIGN DESIGNATION

A.A.D.T. (2019) = 3,270
V = 30 MPH
A/C = NONE

COUNTY LINE
CITY LIMITS
STATE OR NATIONAL LINE
TOWNSHIP, SECTION or GRANT LINE
PROPERTY LINE
HIGHWAY FENCE
EXISTING FENCE
GUARD FENCE
CONSTRUCTION LIMITS
RIGHT OF WAY LINE
TRAVELED WAY
RAILROADS

CENTER LINE OF PROJECT
TERRACE
CULVERTS
DROP INLET & STORM SEWER
ACCESS CONTROL
POWER POLE
TELEPHONE POLE
MARSH
HEDGE
TREES
PROFILE ELEVATION
STREAM or CREEK

GROSS LENGTH OF PROJECT	365.00	FT.		
EXCEPTIONS	0.00	FT.		
ADDITIONS	0.00	FT.		
NET LENGTH OF PROJECT	365.00	FT.	0.069	MILES
NET LENGTH OF BRIDGES	0.00	FT.	0.00	MILES
NET LENGTH OF ROAD	365.00	FT.	0.069	MILES

RECOM. FOR APPROVAL–DATE
11-16-21
City Manager
LOCAL PUBLIC OFFICIAL

PLANS PREPARED BY:
EVANS – BIERLY – HUTCHISON & ASSOCIATES
CIMARRON, KANSAS

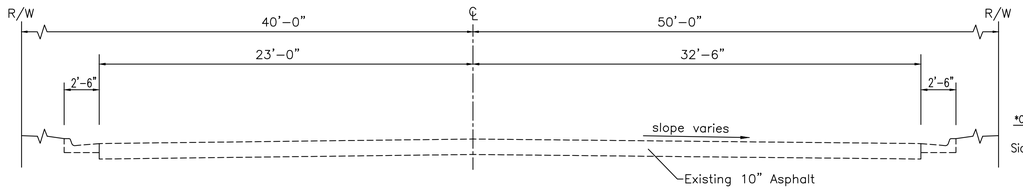
Approved Mar 07,2022

State Transportation Engineer

By: Dawn M Hueske
Assistant Chief, Bureau of Local Projects

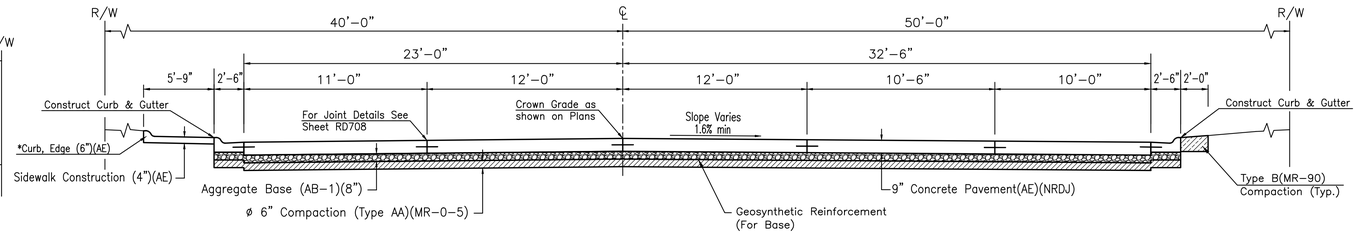
KANSAS DEPARTMENT OF TRANSPORTATION

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	2	50



EXISTING TYPICAL SECTION

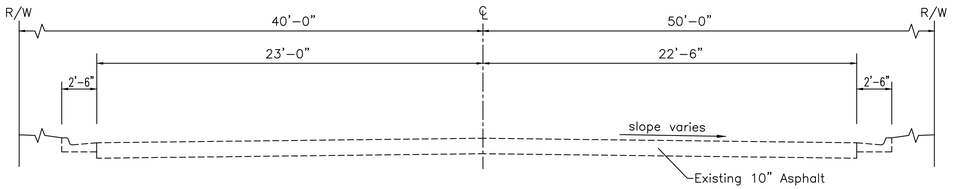
Sta 349+15.00 to Sta 351+16.45



PROPOSED TYPICAL SECTION

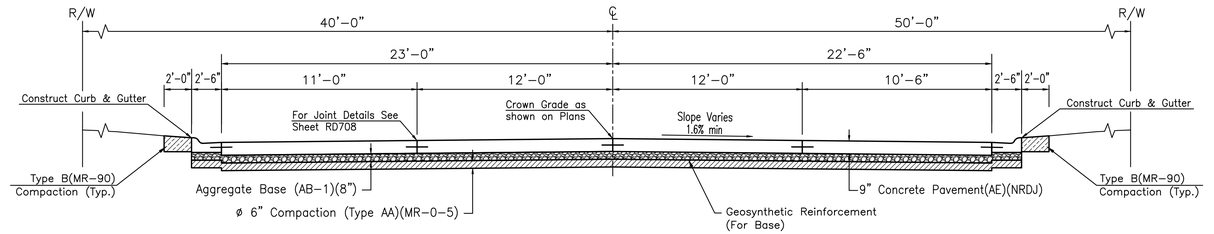
Sta 349+15.00 to Sta 351+16.45

* Curb, Edge (6")(AE) from Sta. 349+88.60 to Sta. 350+86.30



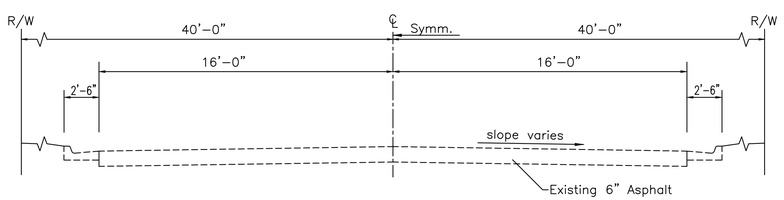
EXISTING TYPICAL SECTION

Sta 351+16.45 to Sta 352+80.00



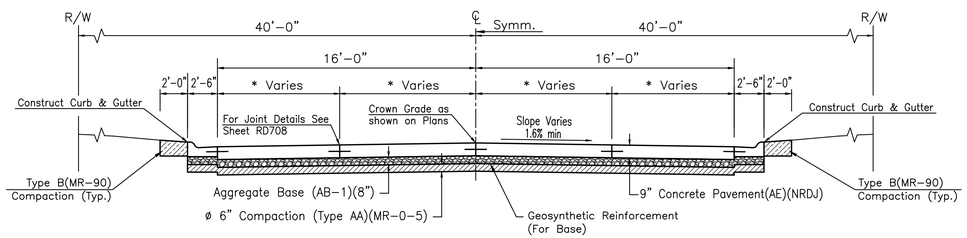
PROPOSED TYPICAL SECTION

Sta 351+16.45 to Sta 352+80.00



EXISTING TYPICAL SECTION

12th STREET



PROPOSED TYPICAL SECTION

12th STREET

* See Joint Plan for side street joint spacing.

ø 6" compaction shall be Foundation Treatment and is Subsidiary.

NO.	DATE	REVISIONS	BY	APP'D

TYPICAL SECTIONS

FHWA APPROVAL		APP'D	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	3	50

GENERAL NOTES

AT BORROW AREA LOCATIONS ADJACENT TO THE RIGHT OF WAY, UTILITY POLES MAY BE SET AT THE PERMANENT LOCATIONS PRIOR TO CONSTRUCTION AS APPROVED BY THE ENGINEER, PROVIDED A MINIMUM VERTICAL CLEARANCE, IN ACCORDANCE WITH THE NATIONAL ELECTRICAL SAFETY CODE, IS OBTAINED. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND THESE POLES TO COMPLETE THE WORK.

BORROW AREAS PROVIDED BY THE CONTRACTOR SHALL BE APPROVED BY THE ENGINEER AS TO SUITABILITY OF MATERIAL AND LOCATION. SPECIAL CARE SHALL BE TAKEN IN THIS APPROVAL TO MINIMIZE THE INCREASE OF SILTATION AND TURBIDITY OF STREAMS, LAKES AND RESERVOIRS AND TO AVOID INTERFERENCE WITH THE MOVEMENT OF MIGRATORY FISH. AREAS WHICH, IN THE OPINION OF THE ENGINEER, MAY LEAVE AN UNSIGHTLY APPEARANCE TO THE PROJECT WILL NOT BE APPROVED.

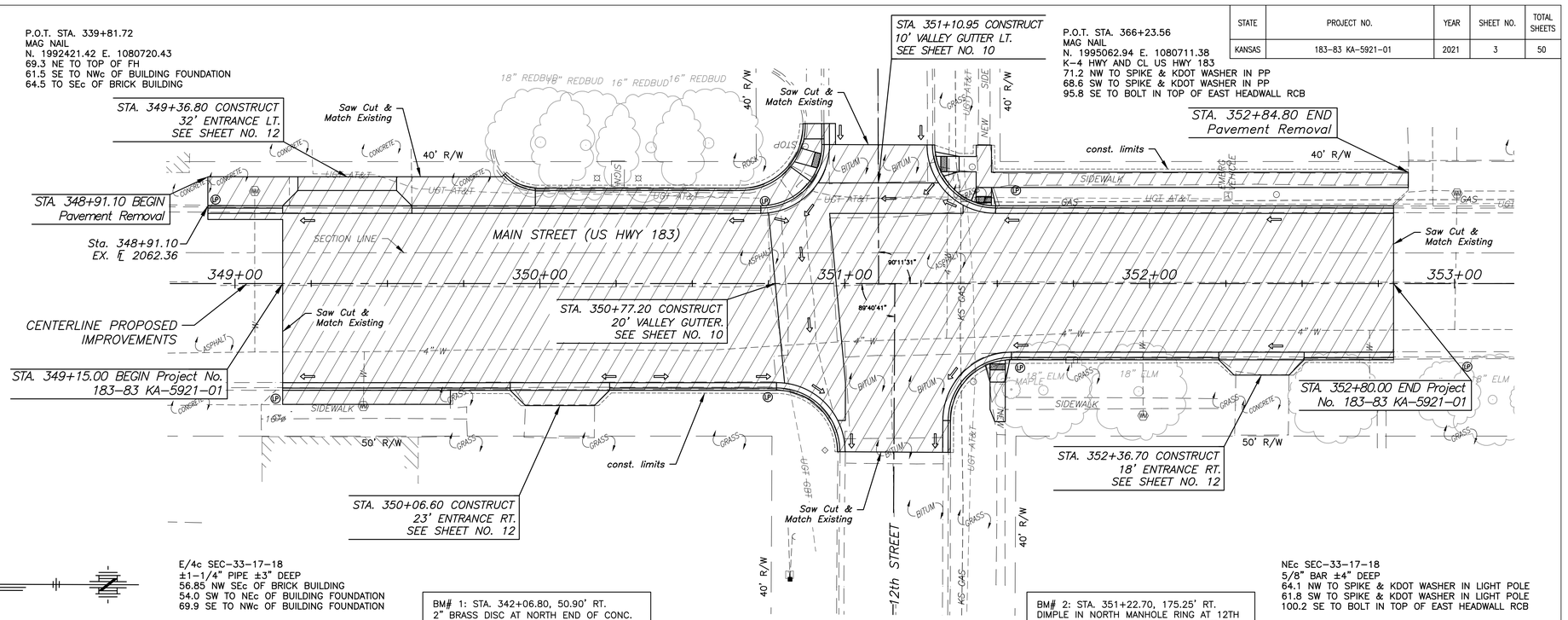
ALL BORROW AREA LOCATIONS SHALL BE SUBMITTED TO THE KANSAS HISTORICAL SOCIETY AND THE KANSAS DEPARTMENT OF WILDLIFE AND PARKS PRIOR TO ANY EXCAVATION.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE, SEED AND/OR COMPLETE OTHER OPERATIONS NOTED IN THE AGREEMENT WITH THE LAND OWNER, APPROVED BY THE ENGINEER, ON ALL DISTURBED AREAS USED TO PROVIDE BORROW AREAS FOR COMMON EXCAVATION (CONTRACTOR FURNISHED). EMBANKMENT QUANTITIES FOR INITIAL CONSOLIDATION AND SETTLEMENT SHOWN IN THE EARTHWORK QUANTITIES ARE SUBSIDIARY TO OTHER EARTHWORK ITEMS. MATERIAL FOR THE EMBANKMENT IS INCLUDED IN THE EXCAVATION QUANTITIES.

ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WOULD REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT.

ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED LOCATION.

ALL SAW CUTS SHALL BE FULL DEPTH AND ARE SUBSIDIARY TO OTHER BID ITEMS.



SCALE

50' 0' 50' 1"

PLAN: Lat. & Long.

PROFILE: Horiz. same as above. Vert. → 0' 1'

PROJECT SURVEY CONTROLS

HORIZONTAL CONTROL

Horizontal Datum = Local Ground Coordinate System

VERTICAL CONTROL

Vertical Datum = Sea Level
Datum Bench Mark : NGS BM D 268
Elev. 2073.49

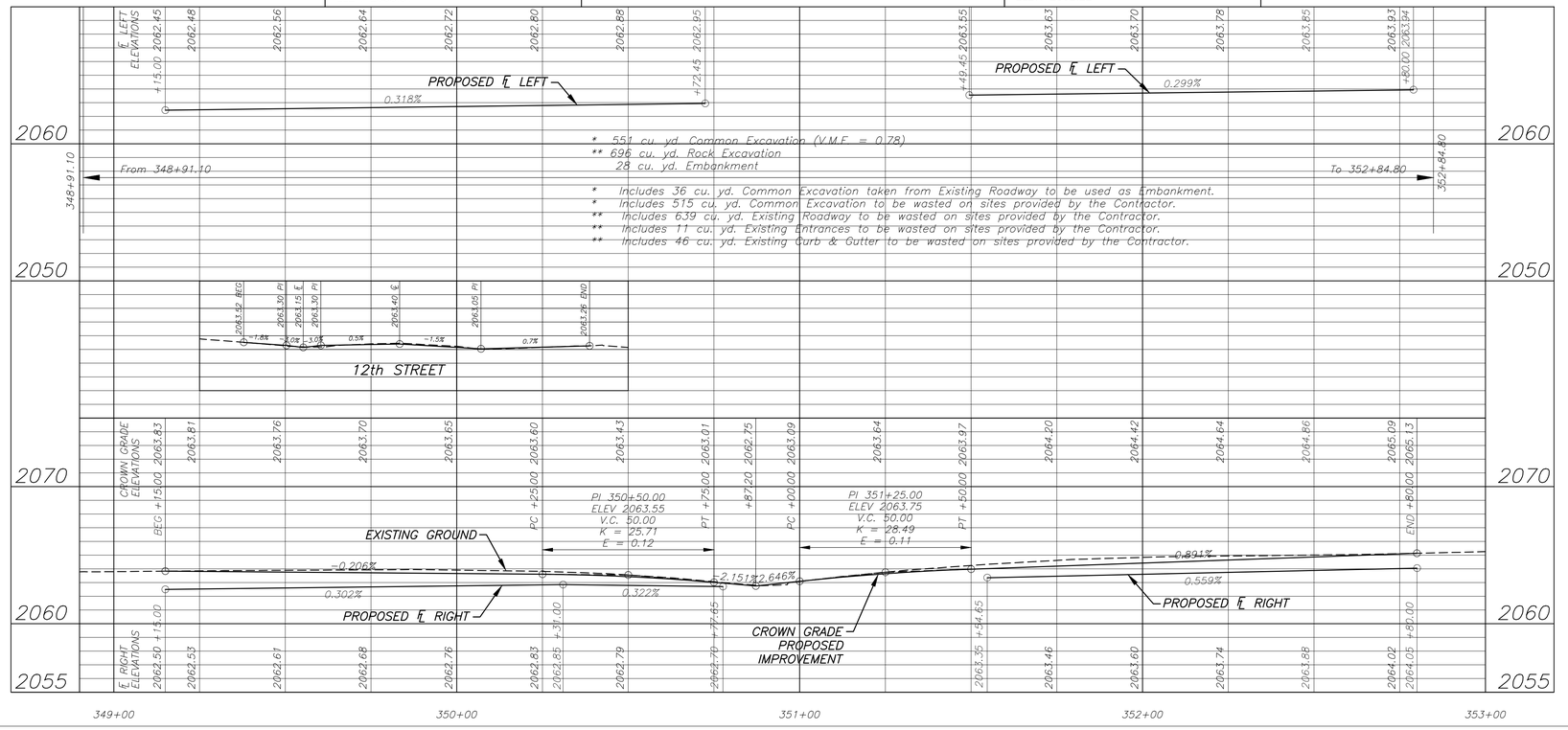
A Standard Disk, stamped "D2681940" and set in bridge abutment. 1.1 miles along the Missouri Pacific RR from City Hall at LaCrosse, and crossing State Hwy 4. About 80 feet east of the crossing, at a bridge, in the top of the SW Wingwall south abutment.

LEGEND

▨ PAVEMENT REMOVAL

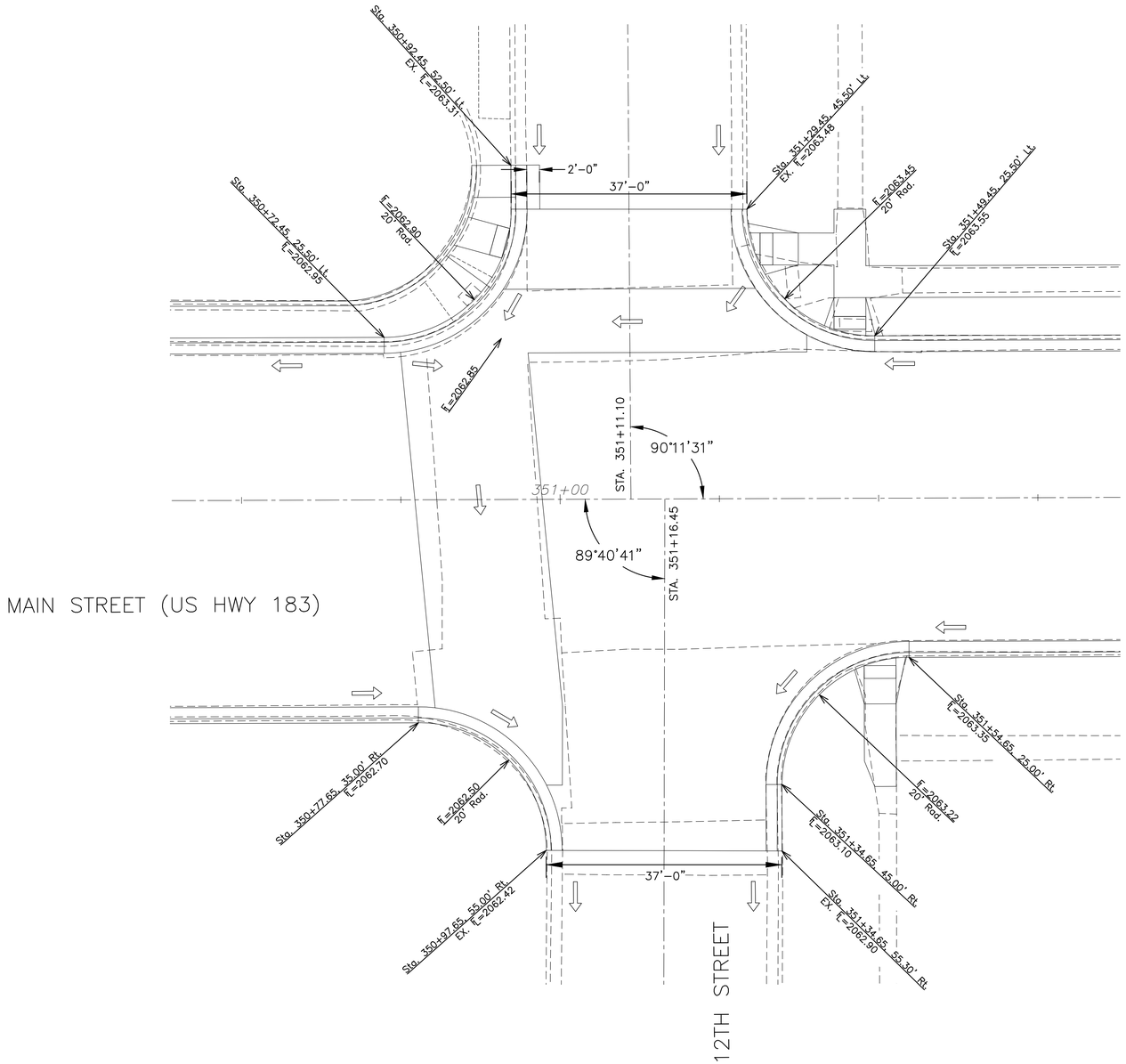
UTILITY OWNERS

WATER	CITY OF LA CROSSE 1119 MAIN ST. 785-222-2511	GAS	KANSAS GAS 1-800-794-4780
SEWER	CITY OF LA CROSSE 1119 MAIN ST. 785-222-2511	CABLE	GOLDEN BELT TELEPHONE 1-800-432-7965
ELECTRIC	CITY OF LA CROSSE 1119 MAIN ST. 785-222-2511		
TELEPHONE	AT&T 1-800-499-7928		



STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	4	50

SCALE: 1" = 10'



NO.	DATE	REVISIONS	BY	APP'D
2				
1				

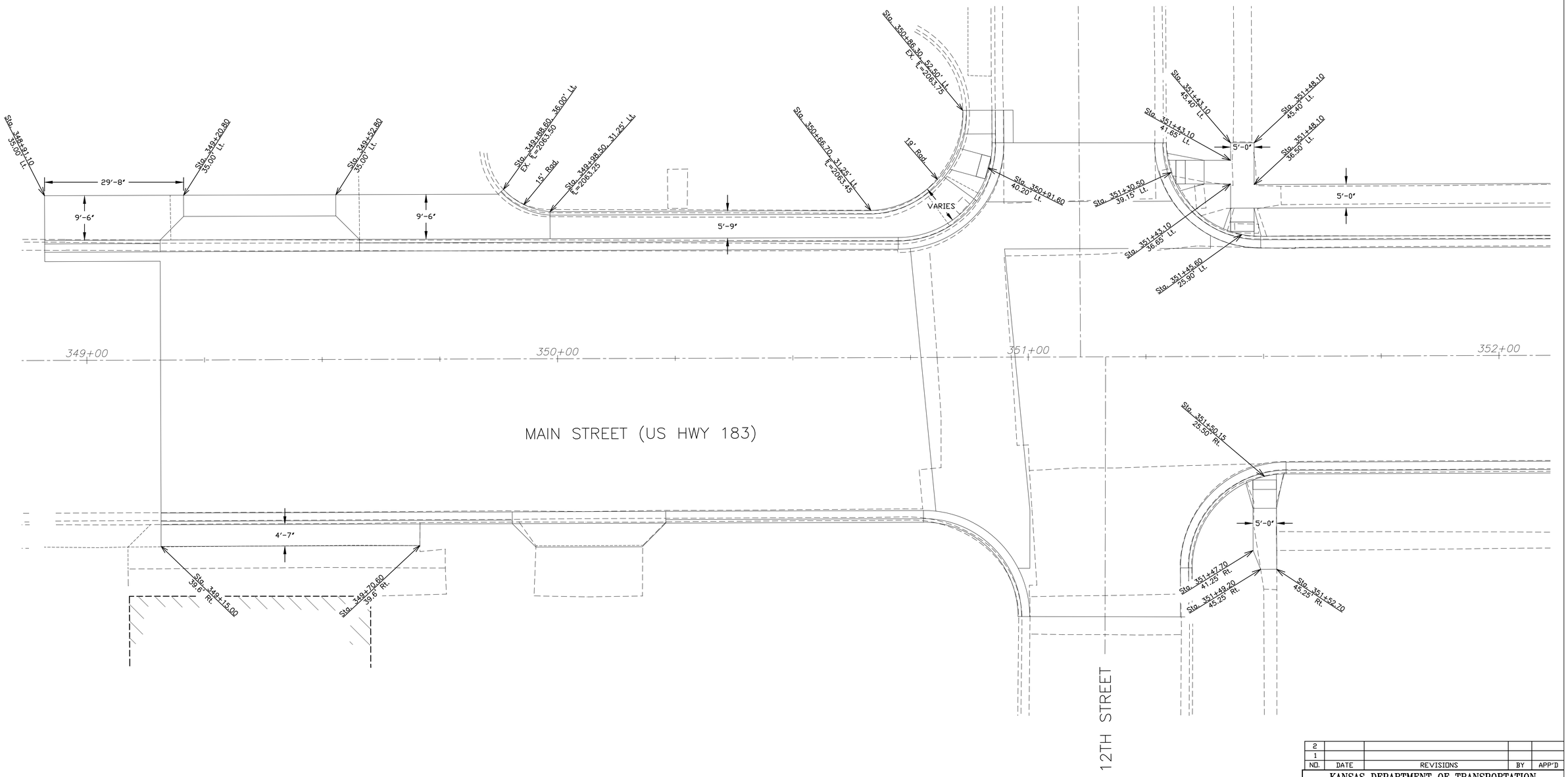
KANSAS DEPARTMENT OF TRANSPORTATION

INTERSECTION DETAIL

SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED	QUANTITIES	CADD PGF
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK. CEH

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	5	50

SCALE: 1" = 10'



SIDEWALK CONSTRUCTION (4")(AE)
LAYOUT DETAILS

NO.	DATE	REVISIONS	BY	APP'D
2				
1				

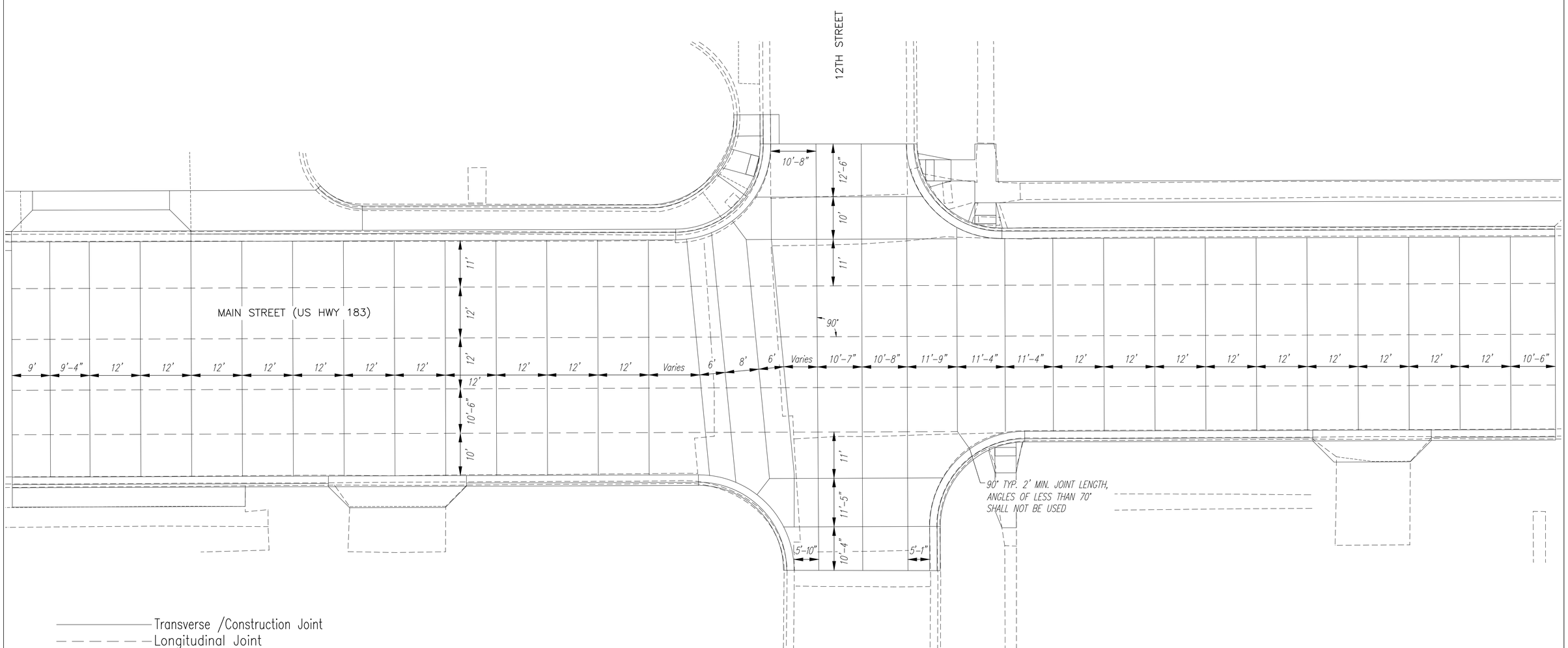
KANSAS DEPARTMENT OF TRANSPORTATION

MISC. DETAIL

SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED	QUANTITIES	CADD PGF
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK. CEH

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	6	50

N.T.S



Transverse /Construction Joint

Longitudinal Joint

Notes:

Transverse Construction Joints shall be adjusted to fit uniformily with New Construction.

Joints in Intersection Areas may vary to fit Existing Conditions, 15' Maximum.

Match all Existing Pavement Elevations at Transitions.

For Concrete Pavement Construction and Joint Details See Sheets RD708 & RD735.

All New Concrete Shall be Tied Into Existing Concrete. See Sheet RD708.
Subsidiary To Concrete Bid Items.

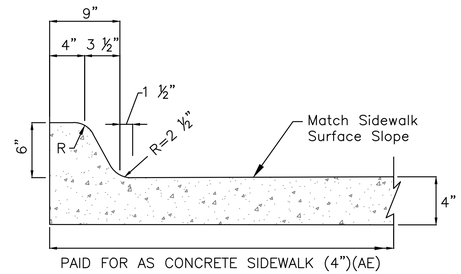
NO.	DATE	REVISIONS	BY	APP'D
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

JOINT PLAN

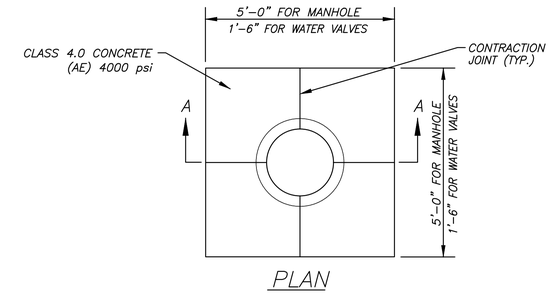
SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED	QUANTITIES	CADD PGF
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK. CEH

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	7	50

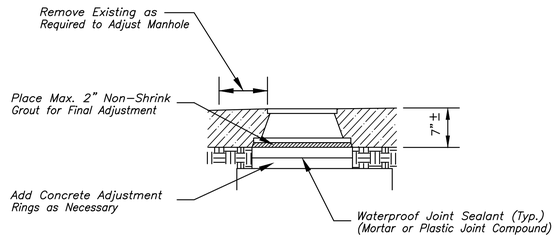


CURB, EDGE (6")(AE)

1. IN CASE OF EXISTING BRICK MANHOLES, BRICKS SHALL BE REMOVED OR ADDED AS NECESSARY FOR GRADE ADJUSTMENT. BRICKS SHALL BE PLACED IN MORTAR BED (TYP.).
2. FOR SANITARY APPLICATIONS $\frac{1}{4}$" MORTAR FINISH SHALL BE APPLIED TO EXTERIOR BRICK SURFACE OF MANHOLE.
3. ALL EXCAVATION, BACKFILL, MATERIALS AND INCIDENTAL WORK REQUIRED FOR COMPLETE INSTALLATION SHALL BE SUBSIDIARY TO ADJUSTMENT OF MANHOLES BID ITEM.
4. ALL PRECAST RISERS, CONES, ADJUSTMENT OR GRADE RINGS, ETC., NECESSARY FOR MANHOLE ADJUSTMENT, SHALL BE MANUFACTURED ACCORDING TO THE MOST RECENT ASTM SPECIFICATIONS AND SPECIAL PROVISIONS. CONE SECTIONS SHALL BE ECCENTRIC TYPE WHEN REQUIRED.
5. ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT. ALL JOINTS SHALL BE FILLED WITH MORTAR OR PLASTIC JOINT COMPOUND AS SPECIFIED IN THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS WORK.
6. ADJUSTMENT OR GRADE RINGS SHALL BE FORMED WITH TONGUE AND GROOVE OR LUGS AND NOTCHES. RINGS SHALL BE SET IN MORTAR.



PLAN



SECTION A-A

WATER VALVE BOX AND MANHOLE ADJUSTMENT

AT LOCATION AS SHOWN ON PLAN SHEET

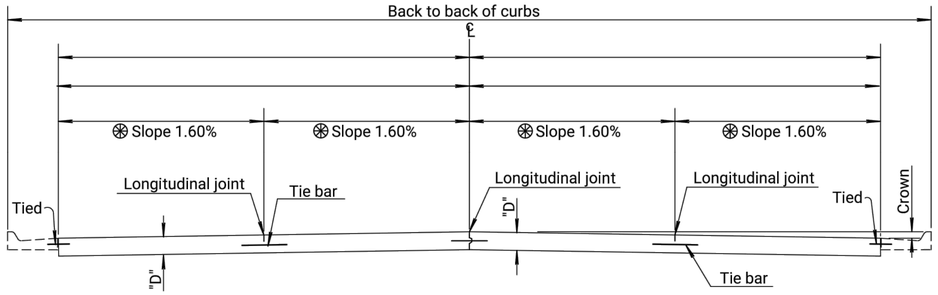
NO.	DATE	REVISIONS	BY	APP'D
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

MISC. DETAILS

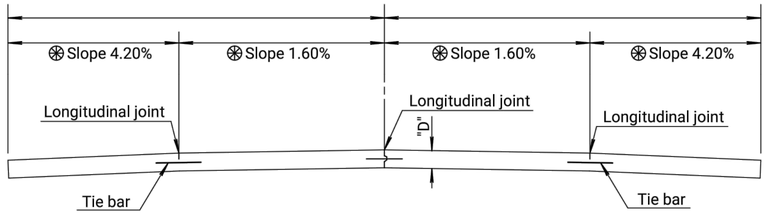
SHEET NO. OF	SCALE	APP'D		
DESIGNED	DETAILED	QUANTITIES	CADD	PGF
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.	CEH

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	8	50



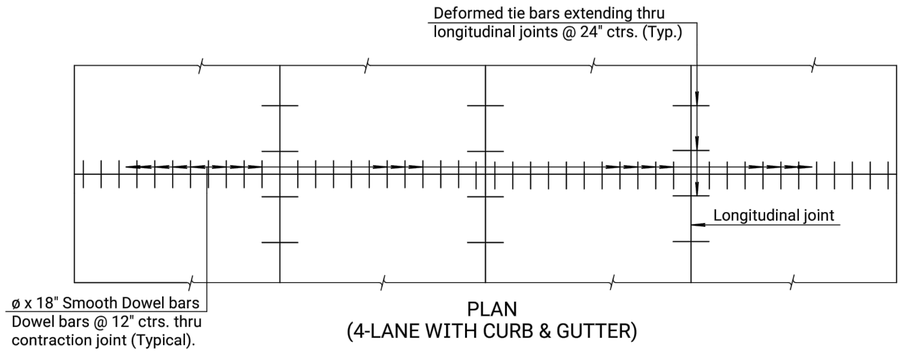
For Curb & Gutter details
See Standard Drawing RD635.

TRANSVERSE SECTION
(4-LANE WITH CURB & GUTTER)

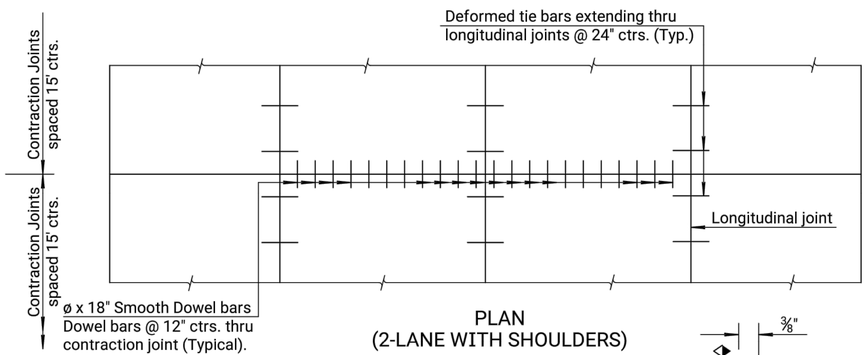


TRANSVERSE SECTION
(2-LANE WITH SHOULDERS)

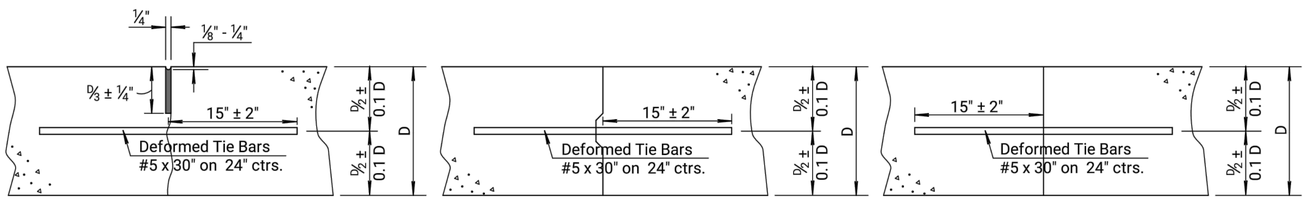
⊛ Normal cross slopes. See Typical Section or Cross Sections for variations.



PLAN
(4-LANE WITH CURB & GUTTER)

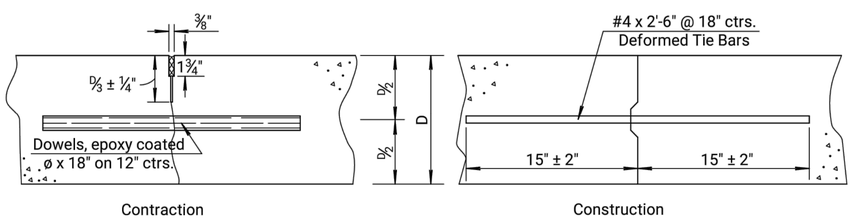


PLAN
(2-LANE WITH SHOULDERS)



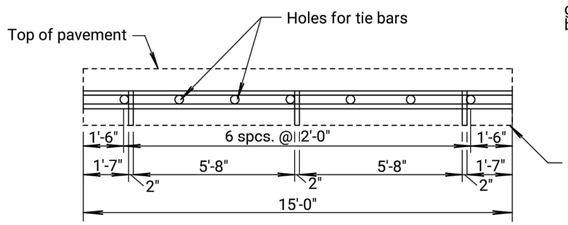
Note: For longitudinal construction joints the contractor has the option of using either the keyed or butt type. Place deformed tie bars mid-depth of the shoulder.

LONGITUDINAL JOINTS



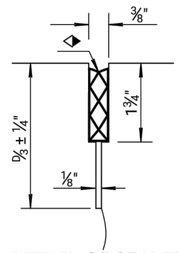
TRANSVERSE JOINTS

Note: Construct contraction joints at plan locations or at the Engineer's direction.
When necessary to interrupt continuous placement for a substantial length of time or at the end of a day's paving, the Contractor has the option of ending placement at a contraction joint or with a construction joint located a minimum of five (5) feet from a contraction joint. Construct either joint type by placing a header at the end of the pour or by paving past the joint location. After the concrete has hardened, saw joint and drill holes for tie bars or dowels.



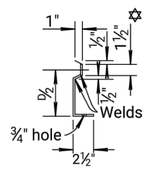
METAL STRIP FOR
LONGITUDINAL CONSTRUCTION JOINT

To be used only against forms, do not extend through contraction joints.
For automated placement tie bars are spaced at uniform 24" centers.
✡ Use snap-in leg or other approved design in lieu of welded leg.



DETAIL OF SEALED
JOINT SAWCUT

Make an initial ⅛" saw cut (D/3 ± ¼" depth); the second ⅜" saw cut is a separate operation done after concrete has gained sufficient strength to avoid spalling as determined by the Engineer.



SECTION OF
RECESSED
FORM LEG

GENERAL NOTE

Epoxy coat all deformed tie bars that are straight. Patch any damage to the epoxy coating in accordance with the Standard Specifications.

Use billet steel Grade 40 reinforcing for deformed tie bars that require bending, may be epoxy coated at the Contractor's option.

~~Place pressure relief joint at the end of the bridge approach pavement slab (no bars through joint). For details of pressure relief joint see Standard Drawing RD712.~~

Use load transfer devices as shown in details at all construction joints on mainline pavement unless otherwise noted. Shoulder contraction joints have no dowels unless specifically shown on the plans.

✡ Fill all sawed joints on the project in accordance with the Standard Specifications with the exception of those joints in pavement constructed over Cement or Asphalt Treated Base.

⚹ Use single saw cut, ⅛" wide, joint in pavement constructed over Cement or Asphalt Treated Base (Non-Sealed Joint Sawcut). Use single saw cut, ⅛" wide, joint for shoulder pavement adjacent to mainline pavement constructed over Asphalt or Cement Treated Base (Non-Sealed Joint Sawcut). See detail this sheet.

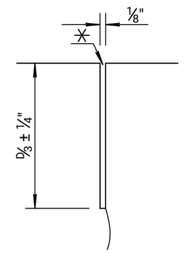
Shape all keyed joints similar to section of recessed form leg as shown on this sheet.

Evenly space tie bars along the length of slab with no tie bar within 12" of contraction joint. All longitudinal joints are tied.

Shoulder rumble strips will not be constructed as part of this project.

DOWEL SIZE	
D (in.)	Diameter
6 < D < 9	1"
9 ≤ D < 11	1¼"
D ≥ 11	1½"

PAVEMENT DEPTH
D= 9"



DETAIL OF NON-SEALED
JOINT SAWCUT

Make only the initial ⅛" saw cut after concrete has gained sufficient strength to avoid spalling as determined by the Engineer.

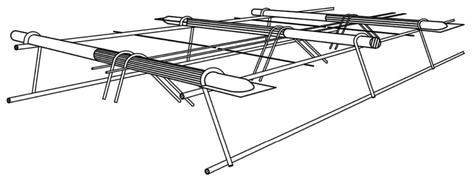
NO.	DATE	REVISIONS	BY	APP'D
19	5-17-13	Revised Note, Longitudinal Joints	S.W.K.	J.O.B.
18	3-21-12	Revised Table, Dowel Size	S.W.K.	J.O.B.
17	1-9-12	Added Detail, Non Sealed Joint	S.W.K.	J.O.B.
16	8-18-10	Revised Dowel Size & Notes	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

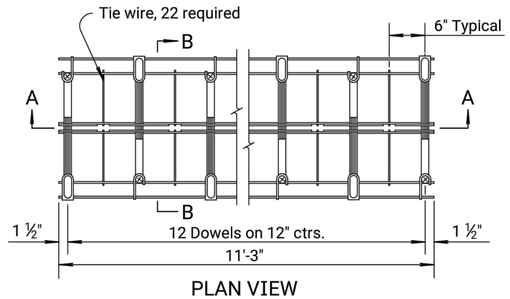
CONCRETE PAVEMENT DOWEL JOINTED NON-REINFORCED

RD708

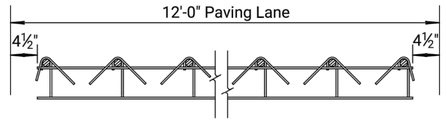
FHWA APPROVAL	10-23-13	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King



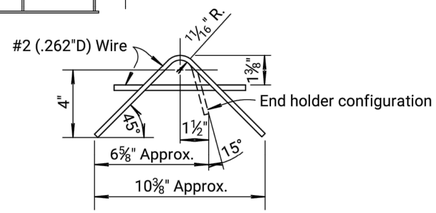
PERSPECTIVE VIEW

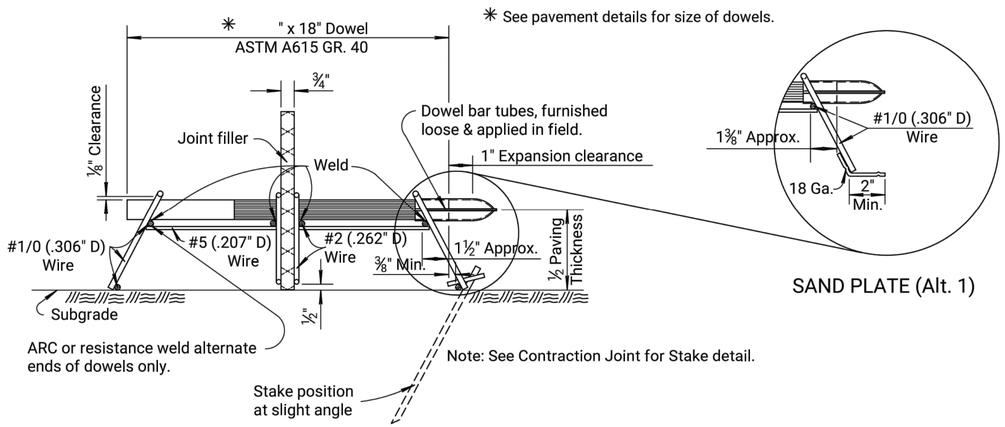


PLAN VIEW



SEC. A-A





SEC. B-B

SAND PLATE (Alt. 1)

EXPANSION JOINT

GENERAL NOTE

Coat each dowel bar with an epoxy coating that meets the standard specifications. Uniformly apply the powdered epoxy coating according to accepted practices and the coating manufacturer's recommendations. The coating need not be applied to the end faces of the bars and will not be required within 2" of the end which will be fixed in the supporting bracket by welding.

Cut the dowel bars to length in such a manner to result in no appreciable deformation of the ends.

Dowel Baskets

Wire sizes shown are minimum required.

Stake baskets to subgrade as shown. Use ramset or similar type fastener with clip when subgrade condition requires it.

Sides held together with tie wire, allowing quick separation of sides and insertion of expansion material, provided in the field.

Use one length of Preformed Expansion Joint filler (Type B), or other approved material as determined by the Engineer, cut to fit crown and subgrade for each lane of pavement as expansion joint filler.

Stretch a string line between the pavement forms along the center line of the joint.

Visually inspect bond breaker was applied to the dowel bars in accordance with KDOT's Standard Specifications prior to placing concrete pavement.

Carefully level the entire joint assembly so that the dowels are parallel to the slab surface and free to slide in the dowel holders. Replace any coating scraped off the dowels during assembly.

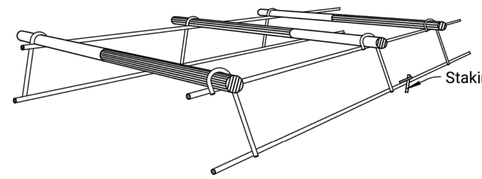
Check each completed contraction joint assembly to be certain the vertical plane of the joint will be perpendicular to the finished surface of the slab and at a right angle with the center line of the slab unless otherwise shown on the plans. Check the dowels to be certain they are level and will remain in a position parallel with the finished surface of the slab.

Place concrete over and adjacent to the joint in accordance with the requirements of the Standard Specifications.

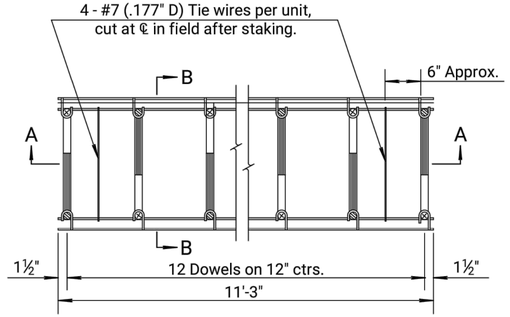
After completion of machine finishing, floating, and straight edging the surface, carefully remove the concrete over the filler and edge the joint with an edger of the proper size.

Install expansion joint material in the field.

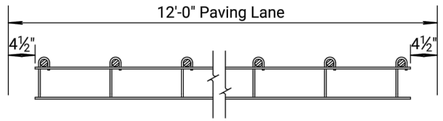
Alternative designs may be used in lieu of the type shown as approved by the Engineer.



PERSPECTIVE VIEW

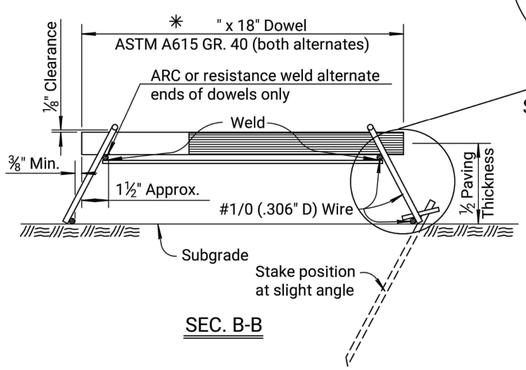


PLAN VIEW

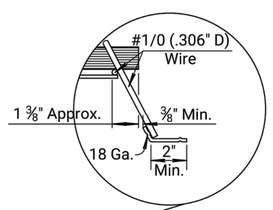


SEC. A-A

✳ See pavement details for size of dowels.

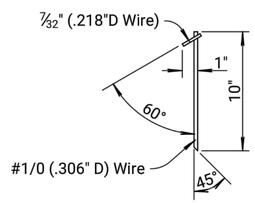


SEC. B-B



SAND PLATE (Alt. 1)

CONTRACTION JOINT



STAKE DETAIL

(6 Pieces minimum required)

GENERAL NOTE

Coat each dowel bar with an epoxy coating that meets the standard specifications. Uniformly apply the powdered epoxy coating according to accepted practices and the coating manufacturer's recommendations. The coating need not be applied to the end faces of the bars and will not be required within 2" of the end which will be fixed in the supporting bracket by welding.

Cut the dowel bars to length in such a manner to result in no appreciable deformation of the ends.

Dowel Baskets

Wire sizes shown are minimum required.

Stake baskets to subgrade as shown. Use ramset or similar type fastener with clip when subgrade condition requires it.

Stretch a string line between the pavement forms along the center line of the joint. Carefully mark the position of the joint so the saw cut will coincide with the center line of the joint.

Visually inspect bond breaker was applied to the dowel bars in accordance with KDOT's Standard Specifications prior to placing concrete pavement.

Carefully level the entire joint assembly so that the dowels are parallel to the slab surface and free to slide in the dowel holders. Replace any coating scraped off the dowels during assembly.

Check each completed contraction joint assembly to be certain the vertical plane of the joint will be perpendicular to the finished surface of the slab and at a right angle with the center line of the slab unless otherwise shown on the plans. Check the dowels to be certain they are level and will remain in a position parallel with the finished surface of the slab.

Place concrete over and adjacent to the joint in accordance with the requirements of the Standard Specifications.

Alternative designs may be used in lieu of the type shown as approved by the Engineer.

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	9	50

NO.	DATE	REVISIONS	BY	APP'D
9	6-3-15	Rem. Opt., Mechanical Placement	T.T.R.	S.W.K.
8	2-15-06	Chg. Grade 60 to Grade 40 Steel	S.W.K.	J.O.B.
7	5-5-04	Revision on Epoxy coating	S.W.K.	J.O.B.
6	4-9-03	Rev. General Note on Epoxy coating	R.J.S.	J.O.B.

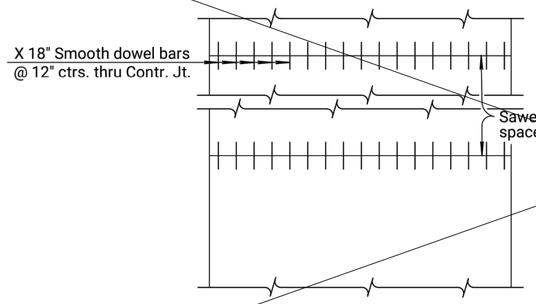
KANSAS DEPARTMENT OF TRANSPORTATION

CONTRACTION & EXPANSION JT. DOWEL ASSEMBLIES

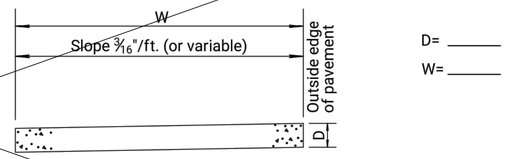
RD735

FHWA APPROVAL	3-30-16	APP'D.	SCOTT W. KING
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Hecht

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	10	50



PLAN



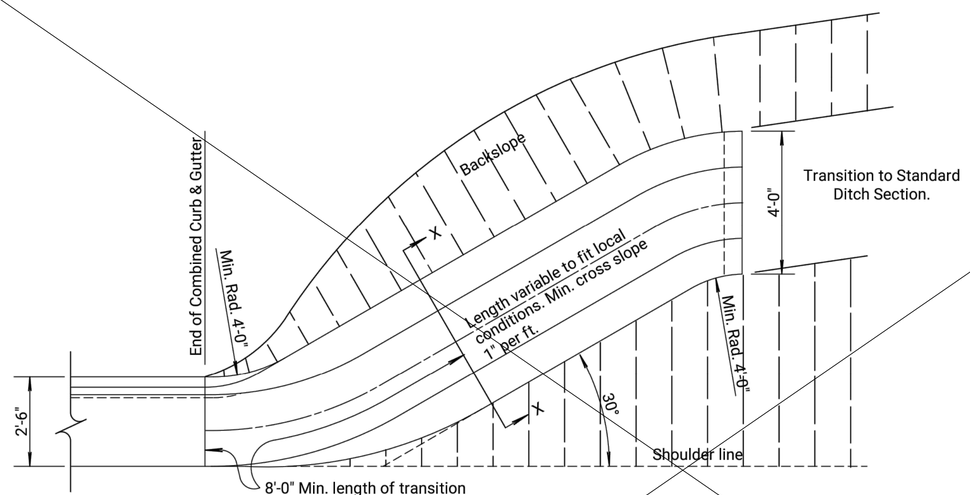
TRANSVERSE SECTION

D= _____

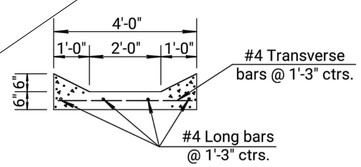
W= _____

Note: For contraction joint detail and other notes and details, see Standard Drawing RD708.

RAMP CONCRETE PAVEMENT



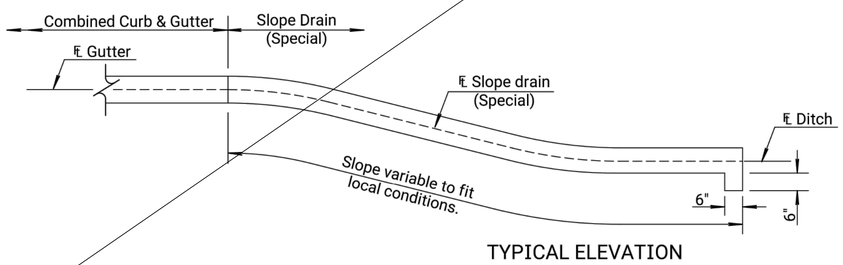
TYPICAL PLAN



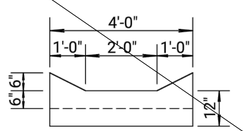
SECTION X-X

Note: Use Concrete Grade 3.0 (AE) throughout. The entire area of the Slope Drain (Special) below the curbs, to be poured and struck off with a uniform thickness of 6". The curbs are to be applied in the same manner and using the same methods as for edge curb.

Reinforcing steel to be deformed #4 bars.



TYPICAL ELEVATION

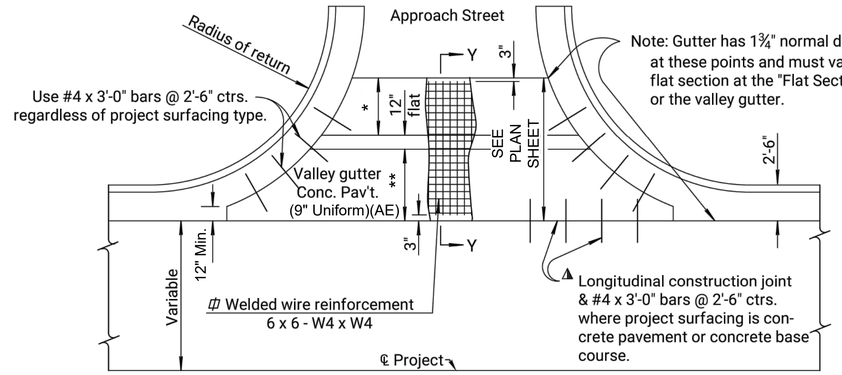


END ELEVATION
(Downstream end)

SLOPE DRAIN (SPECIAL)

NOTE: Use 9" uniform thickness valley gutter concrete pavement with welded wire reinforcement. Approximate weight of welded wire reinforcement = 58 lbs. per 100 sq. ft.

Where valley gutter, alley, and/or entrance pavement is the only pavement on the project, Concrete Grade 3.0 (AE) may be used.



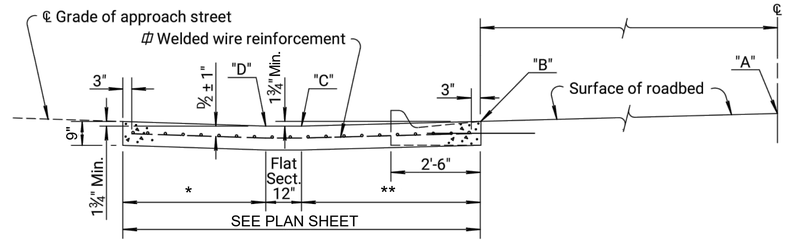
PLAN

10' VALLEY GUTTER: * = 4'
** = 5'

20' VALLEY GUTTER: * = 9.5'
** = 9.5'

△ Where the valley gutter does not abut concrete pavement or concrete base course, omit tie bars and Longitudinal construction joint.

⎅ Welded wire can be substituted with a macro fiber. See standard specifications for macro fiber and dosage requirements.



SECTION Y-Y

VALLEY GUTTER SUMMARY

Street	Station	Side	Elev. Pt. "A"	Elev. on ℄ of Approach Str.		Appr. Str. Grade	Sq. Yds. Conc. pavt. (9" Uniform)(AE)	
				Pt."B"	"C" & "D"			
US HWY 183	350+77.20	CL		2062.95	2062.75		140.7	60.5' B-B
12th STREET	351+10.95	RT	2063.40	2063.30	2063.15	1.8%	49.2	37.0' B-B

VALLEY GUTTER

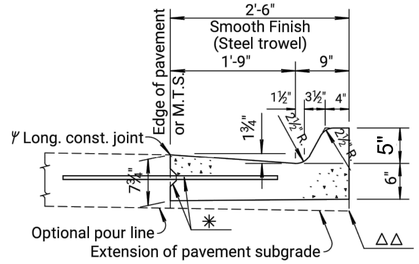
NO.	DATE	REVISIONS	BY	APP'D
13	10-20-10	Added macro fiber option	S.W.K	J.O.B.
12	1-28-05	Changed Class to Grade conc. rel	S.W.K	J.O.B.
11	10-31-01	Removed sho. corrugation details	S.W.K	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT AUXILIARY DETAILS-II

~~RD722~~

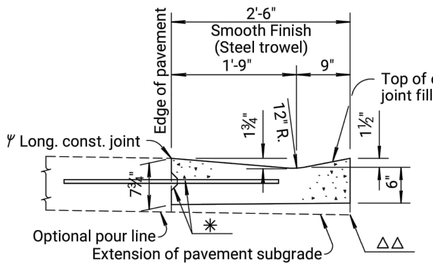
FHWA APPROVAL 6-01-11		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King



TYPICAL SECTION

Note: Conc. C.&G. I contains 0.060 cu. yds. Conc. Grade 3.0 (AE) per lin.ft.

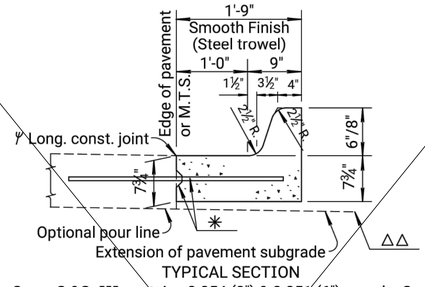
COMBINED CURB & GUTTER - TYPE I (2'-6" WIDTH)



TYPICAL SECTION

Note: Conc. C.&G. II contains 0.053 cu. yds. Conc. Grade 3.0 (AE) per lin.ft.

COMBINED CURB & GUTTER - TYPE II (2'-6" WIDTH)



TYPICAL SECTION

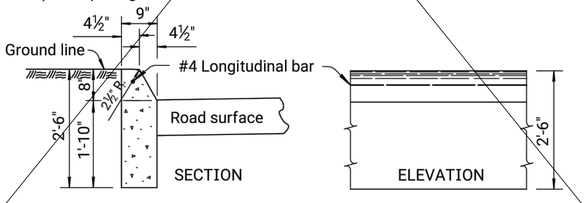
Note: Conc. C.&G. III contains 0.054 (8") & 0.051 (6") cu. yds. Conc. Grade 3.0 (AE) per lin. ft.

COMBINED CURB & GUTTER - TYPE III (1'-9" WIDTH)

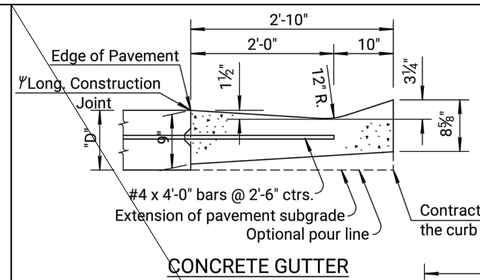
✳ Longitudinal construction joint and #4 x 3'-0" bars @ 2'-6" ctrs., where concrete pavement is constructed.

△△ Contractor has the option of thickening the curb and gutter as shown.

Note: Use Concrete Grade 3.0 (AE) throughout.
All exposed edges shall be finished with an edging tool.
Place a 1" Preformed Expansion Joint Filler (Nonextruding, Type B) at a spacing not to exceed 250'.

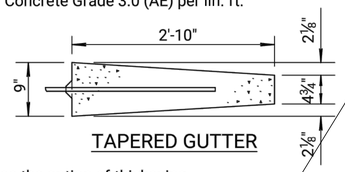


PROTECTION CURB 8"

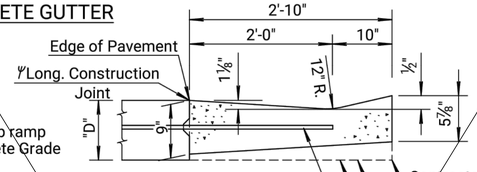


CONCRETE GUTTER

Note: Concrete gutter contains 0.065 cu. yds. Concrete Grade 3.0 (AE) per lin. ft.

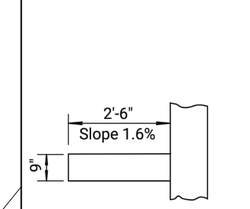


TAPERED GUTTER

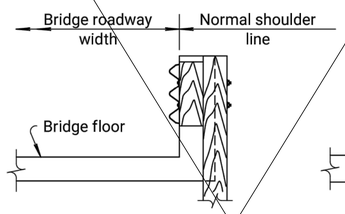


Note: Concrete gutter thru curb ramp contains 0.065 cu. yds. Concrete Grade 3.0 (AE) per lin. ft..

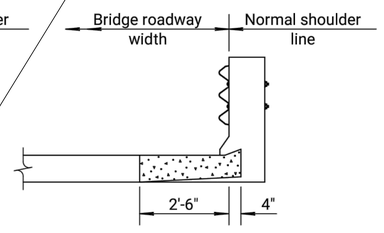
CONCRETE GUTTER THRU CURB RAMP



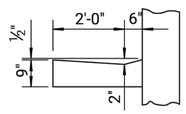
SECTION B-B



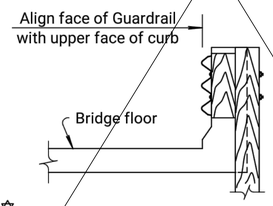
CONTROL POINT FOR FULL WIDTH ROADWAY BRIDGE



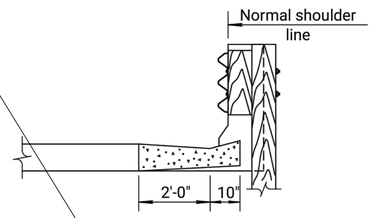
GUTTER NEAR E.W.S.



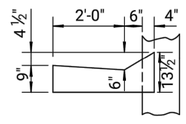
SECTION C-C



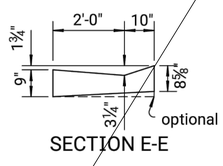
✡ CONTROL POINT FOR BRIDGE WITH SAFETY TYPE CURB



FULL GUTTER SECTION

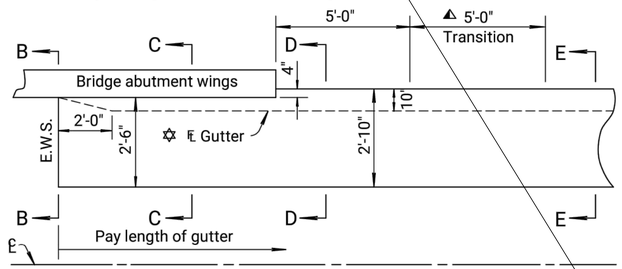


SECTION D-D



SECTION E-E

At locations where the centerline grade is relatively flat and the pavement grade is such that the gutter will direct drainage onto the bridge, the flowline depth may be reduced as directed by the Engineer to facilitate drainage.



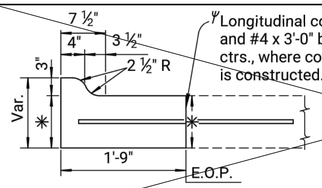
TYPICAL GUTTER @ BRIDGE ENDS

(Drawn for down grade end and "U" Type Abutments)

Note: Shaping of gutter is to be Subsidiary to "Gutter (AE)".

⚠ Transition gutter to standard 2'-10" gutter section.

FOR RETROFIT OF BRIDGE APPROACHES WITH GUTTER



COMBINED CURB AND GUTTER (SPECIAL) (1'-9" WIDTH)

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	11	50

GENERAL NOTE

Combined curb and gutter or gutter adjoining concrete pavement may, at the contractor's option, be constructed either monolithically or separately, using either the mix used in the concrete pavement or Concrete Grade 3.0 (AE). The combined curb and gutter or gutter shall have the same section as shown on the plans. If constructed monolithically, the longitudinal joint and tie bars shall be omitted from the combined curb and gutter or gutter. Pavement Joints shall be continued through curb or gutter and no other planes of weakness will be required. Joints in the combined curb and gutter or gutter are to be filled with the same material as used for the pavement joints.

Expansion joints in the combined curb and gutter are to be placed opposite expansion joints in the pavement.

Where combined curb and gutter or gutter does not abut concrete pavement or concrete base course, omit tie bars and place a 1" Preformed Expansion Joint Filler (Type B) cut to the dimensions of the combined curb and gutter or gutter, at a spacing not to exceed 250' and at the ends of curb returns. Planes of weakness shall be constructed at 10'-0" intervals.

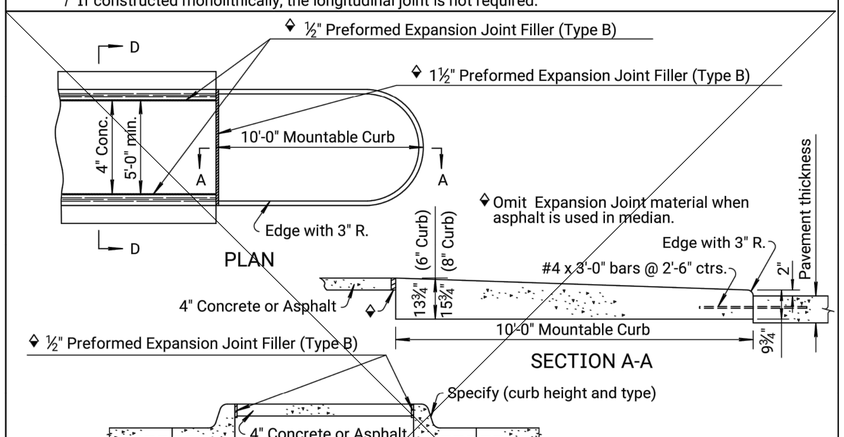
A 4' length of transition from normal gutter section to the tapered gutter section shall be used at the ends of each run of gutter except where the gutter abuts a curb, such as at the end of a bridge. Inlets shall be located so as not to fall within this transition section.

~~Where pressure relief joint is placed across the pavement, and gutter or curb and gutter is continued on for more than 10', use 4"x4" membrane sealant installed with bonding adhesive through gutter section, shaped to fit gutter or curb and gutter. See Std. Drawing RD712.~~

For expansion joint treatment where combined curb and gutter or gutter abuts a bridge wing on a U-type abutment see bridge drawings.

Longitudinal joints shall be sawed and sealed with joint sealant, see Standard Specifications.

℄ If constructed monolithically, the longitudinal joint is not required.



Note: Expansion joints shall be placed in concrete median as follows. In long runs expansion joints Expansion joints in the median shall match expansion joints in the curb and gutter with a maximum spacing of 125'. Plane of weakness in the median shall match plane of weakness in curb and gutter.

TYPICAL NOSE DETAILS FOR RAISED MEDIANS

Note: Additional Concrete Grade 3.0 (AE) needed to complete median nose shall be subsidiary to the bid item "Combined Curb & Gutter".

NO.	DATE	REVISIONS	BY	APP'D
20	2-23-17	Det., Conc. Gutter Thru Curb Ramp	T.T.R.	S.W.K.
19	1-29-13	Added Detail, Comb. C&G (Sp.)	S.W.K.	J.O.B.
18	8-13-12	Revised General Note	S.W.K.	J.O.B.
17	7-2-09	Rev. nose details, jt. sealant & retro.	S.W.K.	J.O.B.

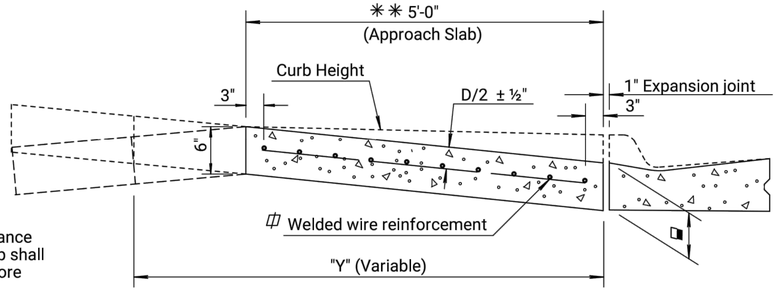
KANSAS DEPARTMENT OF TRANSPORTATION

CURB, GUTTER AND COMBINED CURB & GUTTER

~~RD635~~

FHWA APPROVAL	3-7-17	APP'D. SCOTT W. KING	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

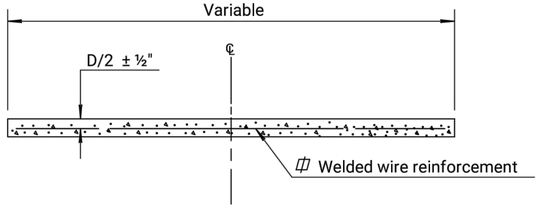
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	12	50



NOTE : On down entrance grades, approach slab shall attain curb height before sloping downward.

SECTION A-A

Match thickness at back of Type II Curb & Gutter.



SECTION B-B

GENERAL NOTES

The angles may be varied to fit special conditions.

Construct entrance approach slab unless otherwise shown.

✳✳ Where entrance pavement is required to extend beyond the 5' approach slab, follow the extension lines shown to the limit of dimension "Y". Beyond this limit match normal alley or entrance driveway pavement width. The 5' concrete approach slab is shaped as shown regardless of sidewalk location.

Use 1" preformed Expansion Joint Filler (Type B or C) for concrete 1" expansion joint.

Where valley gutter,alley,and/or entrance pavement is the only pavement on the project, Concrete Grade 3.0 (AE) may be used, subgrade paper and joint parting strips are not required.

Construct a longitudinal tied joint at W/2 on slabs greater than 15' in width. Place joints on wider slabs to help guide vehicles entering and leaving the entrance, minimum joint spacing is 6 feet.

⧆ Use #4 x 2'-0" deformed tie bars @ 12" spacing as an alternate to welded wire fabric through approach slab joints.

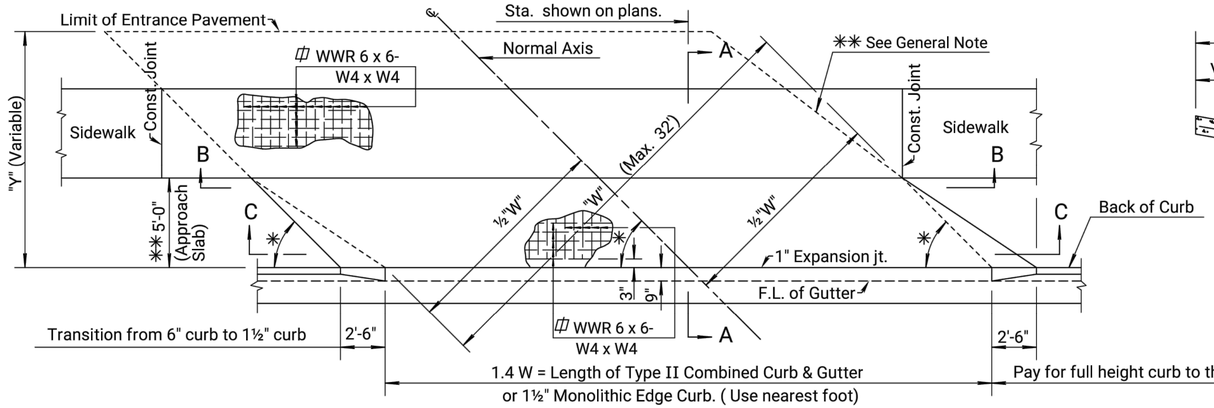
Use chairs for correct vertical placement of welded wire reinforcement and/or tie bars.

No tie bars or wire reinforcement should extend through the joint of the approach slab into the sidewalk or alley.

Approx. weight of welded wire reinforcement = 58 lbs. per 100 sq. ft..

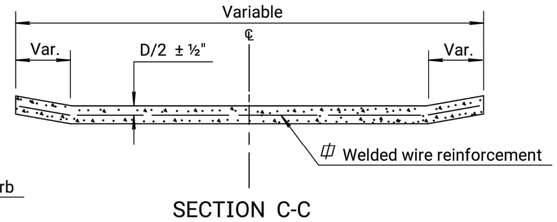
⧆ Welded wire can be substituted with a macro fiber. See KDOT Standard Specifications for macro fiber and dosage requirements.

Where sidewalk is constructed through an entrance slope sidewalk toward the street at 2% or flatter.

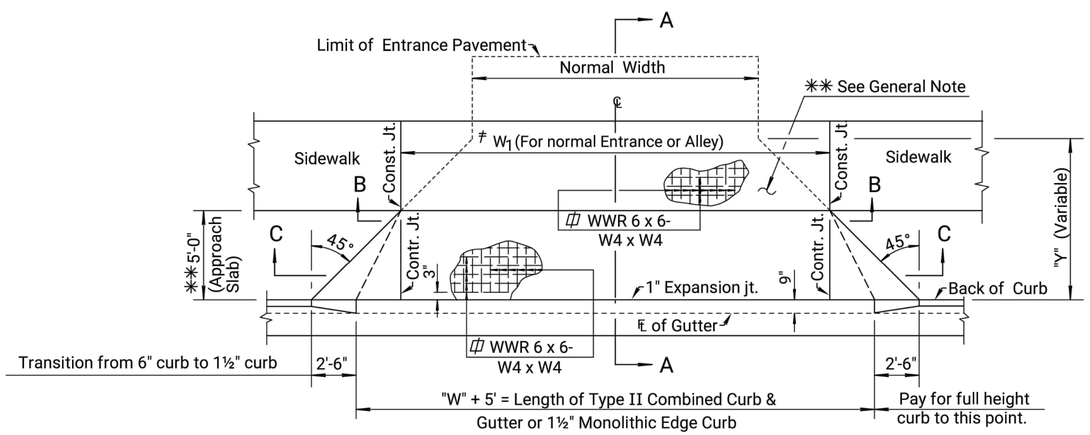


✳ 45° to 90° for one-way operation
60° to 90° for two-way operation

TYPICAL PLAN FOR
SKEWED ENTRANCE PAVEMENT

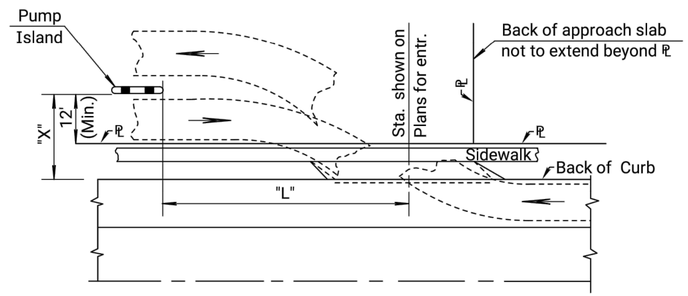


SECTION C-C



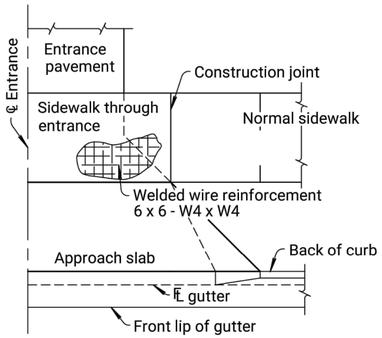
ǂ Note: Value of "W" for Normal entrance.
13' min. for Private entrance.
16' min. for Alley.
40' max.

TYPICAL PLAN FOR
NORMAL ENTRANCE PAVEMENT



TYPICAL LOCATION SKETCH
FOR SKEWED ENTRANCES

Where "X" = 20', then "L"= 55'
Where "X" = 25', then "L"= 60'
Where "X" = 30', then "L"= 65'
Where "X" = 35', then "L"= 68'
Where "X" = 40', then "L"= 70'



REINFORCEMENT DIAGRAM
SIDEWALK THROUGH ENTRANCE

See Std. Drawing RD725 & RD725A for additional sidewalk details.

NO.	DATE	REVISIONS	BY	APP'D
9	10-31-17	Joint Filler Type C Added	A.L.R.	S.W.K.
8	2-23-17	Rev. Gen. Note	T.T.R.	S.W.K.
7	10-20-10	Add. macro fiber opt., General note	S.W.K.	J.O.B.
6	3-30-05	Changed Class to Grade conc., mesh	S.W.K.	J.O.B.

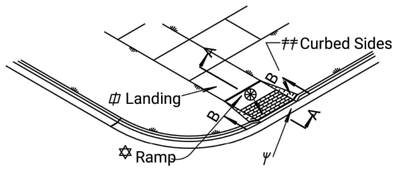
KANSAS DEPARTMENT OF TRANSPORTATION

ALLEY & ENTRANCE PAVEMENT

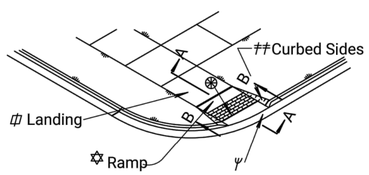
RD726

FHWA APPROVAL	3-5-18	APP'D.	SCOTT W. KING
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

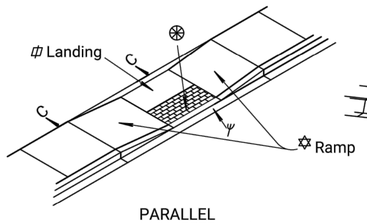
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	13	50



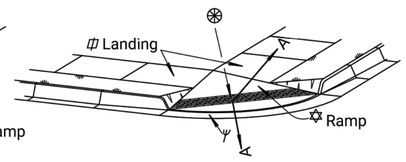
PERPENDICULAR
CURB RAMP (TYPE I)



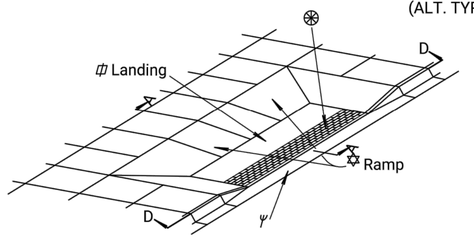
PERPENDICULAR
CURB RAMP THRU CURB RADIUS
(ALT. TYPE I)



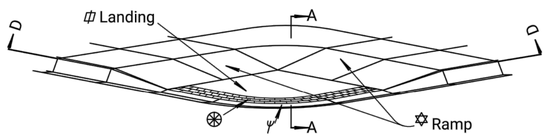
PARALLEL
CURB RAMP (TYPE 2)



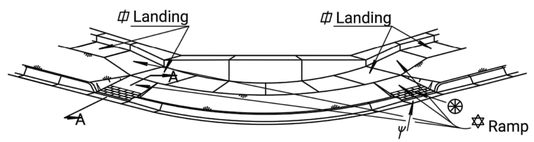
PARALLEL
CURB RAMP THRU CURB RADIUS
(ALT. TYPE 2)



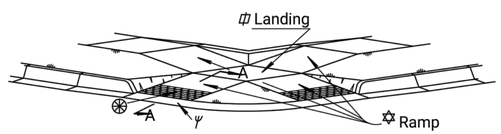
BLENDED TRANSITION
(TYPE 3)



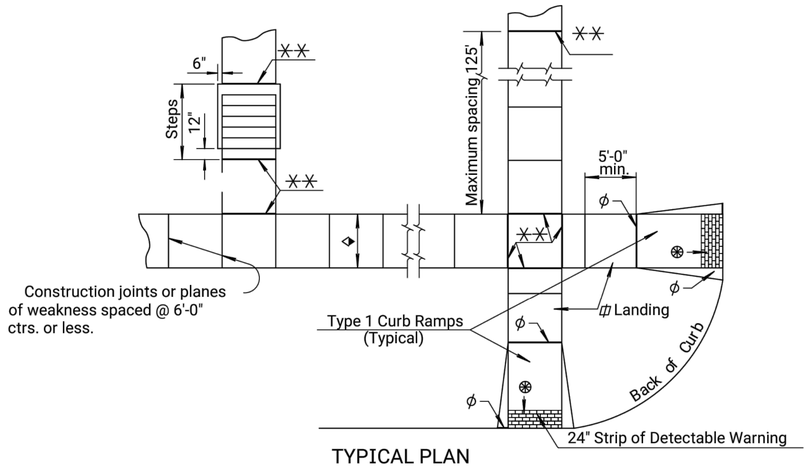
BLENDED TRANSITION
THRU CURB RADIUS (ALT. TYPE 3)



COMBINATION PERPENDICULAR/PARALLEL
CURB RAMP (TYPE 4)



COMBINATION PERPENDICULAR/PARALLEL
CURB RAMP (ALT. TYPE 4)



TYPICAL PLAN

ϕ Expansion Joint (¾" Redwood board) placed at either back of curb line, at sidewalk back of curb line, or at sidewalk line. Alternate expansion joint material may be used as approved by the Engineer.

⚹⚹ Expansion joint (¾" Redwood board) located as shown. Alternate expansion joint material may be used as approved by the Engineer.

⬙ The minimum width of newly constructed sidewalk is 5'-0". Where existing conditions prohibit the use of 5'-0" wide sidewalk, 4'-0" wide sidewalk may be used. Where sidewalk width is less than 5'-0" construct 5'-0" x 5'-0" passing spaces located at 200' intervals (max) as shown in the Passing Space Detail. In general, where new sidewalk is constructed parallel or adjacent to a roadway the sidewalk running slopes will match the grade of the adjacent roadway.

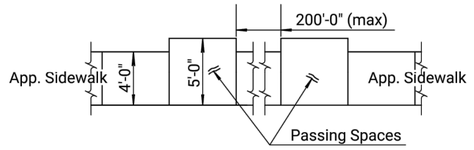
✡ New construction ramp running slopes are 5% (min) to 8.3% (max). Ramp slopes for blended transitions are 5% or flatter. The maximum allowable ramp cross slope is 2% or flatter. Match the ramp width to the width of the approach sidewalk. Curb ramp lengths will vary with curb height. Curb ramp lengths are 5'-0" (min) to 15'-0" (max). All other ramp lengths are 5'-0" (min) to 30'-0" (max). Where roadway grades are relatively flat and curb ramp lengths will exceed 15'-0", ramps may be constructed in succession to tie into existing sidewalk. Maintain ramp slopes and dimensions as previously stated and install a landing between successive ramp runs.

⎅ Use a landing slope of 2% or flatter. Landings are the same width as ramps and adjacent sidewalk with a length measured in the direction of the street crossing of 5'-0" (min). Landings are not required where the ramp running slope is 5% or flatter.

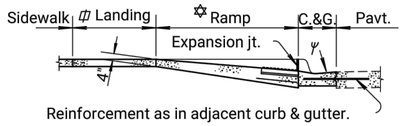
ψ Use a counter slope of 5% or flatter at the base of curb ramps. Refer to Standard Drawing RD725A for additional curb and gutter details.

⊛ Detectable warning installation is typical and required on Perpendicular Ramps (Type 1), Parallel Ramps (Type 2), Blended Transitions (Type 3), median ramp crossings with widths greater than or equal to 6'-0", and other locations as shown in the plans. Install detectable warnings parallel to pedestrian travel except where otherwise shown in the plans. See Standard Drawing RD725A for additional details.

⧺ Use flared sides in place of curbed sides as shown in Flared Side Alt. when not located adjacent to landscaping, street furniture, chains, fencing, or railing. Curbed sides are not permitted within the pedestrian access route. See PROWAG for pedestrian access route definition.

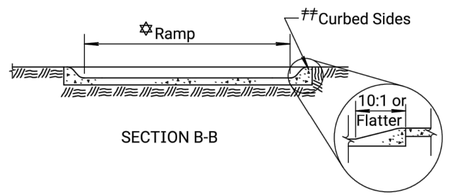


PASSING SPACE
DETAIL



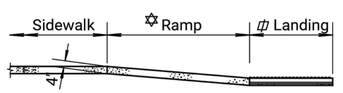
Reinforcement as in adjacent curb & gutter.

SECTION A-A

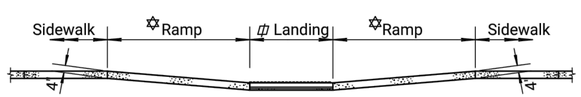


SECTION B-B

FLARED SIDE ALT.



SECTION C-C



SECTION D-D

GENERAL NOTES

Construct sidewalk and ramps in accordance with the current Public Rights of Way Accessibility Guidelines (PROWAG).

The details depicted here may not be appropriate for all locations. Construct to meet this criteria on all roadway alteration projects as defined by the Department of Justice/ Department of Transportation Joint Technical Assistance on ADA Title II Requirements. For an existing sidewalk facility where the sidewalk will be replaced, replace sidewalk in accordance with PROWAG.

Details shown on this sheet apply to newly constructed and existing sidewalk and ramps where roadway alteration projects take place. See KDOT's Standard Specifications for additional information.

Provide ramps at all corners of street intersections where there is an existing or proposed sidewalk and curb. Provide curb ramps at mid-block walk locations for hospitals, medical centers, and athletic stadiums.

Locate ramps as shown on the plans or as directed by the Engineer.

Do not place drainage structures in line with ramps except where existing drainage structures are being utilized in the new construction. Ramp locations should take precedence over the location of drainage structures. Where existing manhole access lids are located on ramps within the area of the detectable warnings and the manhole lid cannot be removed or relocated; install a lid with a detectable warning surface in accordance with PROWAG. Limit drainage across ramps where practicable.

Construct ramps with uniform grade free of sags and short grade changes.

Place ¾" Redwood expansion joints flush with the surface at a maximum spacing of 125'. Place ¾" Redwood expansion joints at sidewalk junctions, see plan details. Where sidewalk abuts a curb place ¾" Redwood board expansion joint flush with the surface.

Place ½" premolded (Type B or C) joint filler where sidewalk is parallel and adjacent to a rigid surface.

⚠ Place sidewalk shown to be constructed in back of an entrance 6" thick with welded wire mesh reinforcement. Gauge and spacing of wires are the same as entrance pavement (See Reinforcement Diagram). The bid item will be "Sidewalk Construciton" either with or without air entrainment. Macro fiber reinforcement may be substituted for welded wire. See KDOT's Standard Specifications for additional information. Slope sidewalk toward the street at 2% or flatter. Slope or depress sidewalk where necessary to fit alleys and entrances, see plans for details.

Contractor may opt to use Concrete Grade 3.0 (AE) throughout for construction of steps, but all work and materials are paid for under the bid item "Grade 3.0 Conc. (Misc.)".

All work and materials needed to construct sidewalk will be paid for under the bid item "Sidewalk Construction".

All work and materials needed to construct ramps will be paid for under the bid item "Sidewalk Ramps".

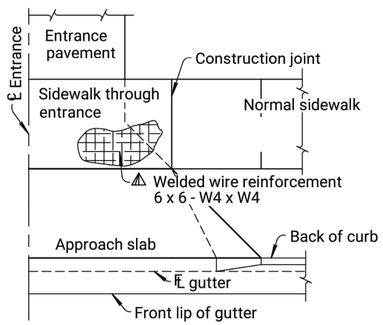
See Standard Drawing RD725A for additional information.

Ramps shall be present at each end of a crosswalk.

For handrails with steps see Standard Drawing RD725B for details.

For handrails with ramps see Standard Drawing RD725C for details.

For alley and entrance pavement see Standard Drawing RD726 for details.



REINFORCEMENT DIAGRAM
SIDEWALK THROUGH ENTRANCE

NO.	DATE	REVISIONS	BY	APP'D
13	10-31-17	Joint Filler Type C Added	A.L.R.	S.W.K.
12	2-23-17	Rev. Ramp Typ., Gen. Note, & Details	T.T.R.	S.W.K.
1 1	10-17-1 1	Revised General Note	S.W.K.	J.O.B.
10	5-23-1 1	Revised notes	S.W.K.	J.O.B.

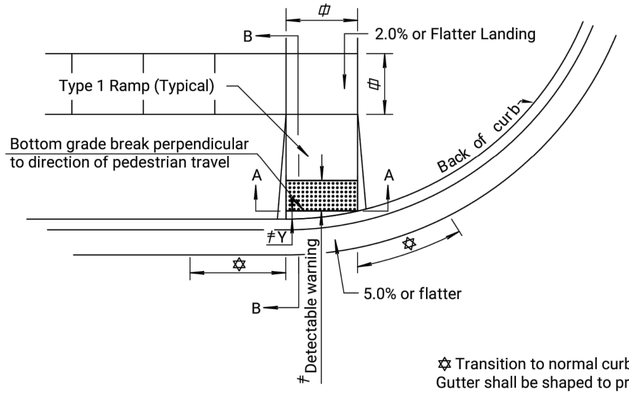
KANSAS DEPARTMENT OF TRANSPORTATION

SIDEWALK, RAMPS, & STEPS

RD 725

FHWA APPROVAL	3-5-2018	APP'D. SCOTT W. KING	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK. 725	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	14	50

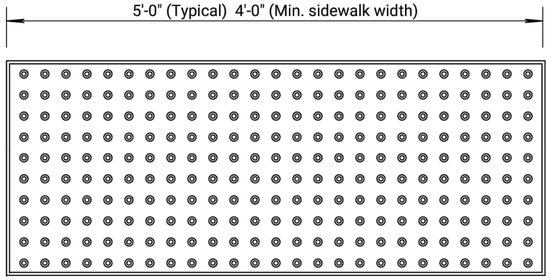


TYPICAL PLAN

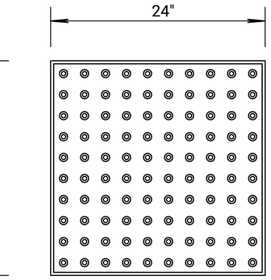
✡ Transition to normal curb and gutter section. Gutter shall be shaped to provide positive drainage.

⧈ See Standard Drawing No. RD725 for additional details.

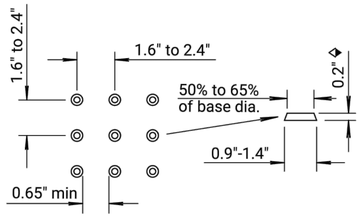
≠ When the dimension "Y" from the back of curb to the bottom ramp grade break is greater than 5'-0" or the ramp is not located through a curb radius, place detectable warning at the back of curb. Otherwise, place detectable warning at the bottom grade break as shown.



ϒ COMPOSITE PANEL with TRUNCATED DOMES

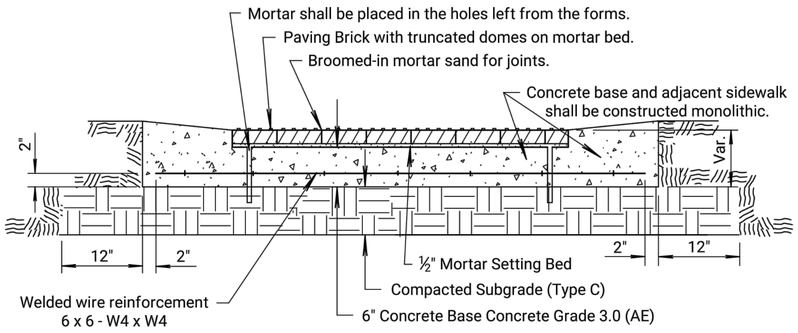


ϒ PRESTRESSED RAMP PANEL with TRUNCATED DOME SURFACE

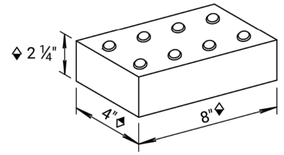


TRUNCATED DOME DIMENSIONS for SQUARE PATTERN (Parallel Alignment)

♦ These dimensions are nominal.



TYPICAL SECTION OF PAVER BRICK
SECTION A-A



ϒ PAVER BRICK WITH TRUNCATED DOME SURFACE

GENERAL NOTES

Construct sidewalk and ramps in accordance with the current Public Rights of Way Accessibility Guidelines (PROWAG).

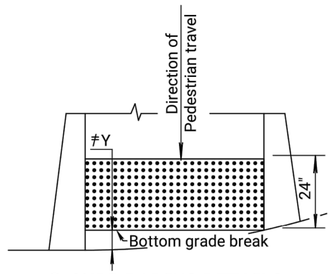
Details depicted here may not be appropriate for all locations. Design to meet this criteria on all roadway alteration projects as defined by the Department of Justice/ Department of Transportation Joint Technical Assistance on ADA Title II Requirements. For an existing sidewalk facility where the sidewalk will be replaced, replace sidewalk according to this drawing to the maximum extent feasible.

Install detectable warning surfaces at all ramp locations unless otherwise shown. Do not install detectable warning surfaces through residential driveway crossing locations. Use Paving Brick, Prestressed or Composite Panel (Truncated Dome Surface) units that meet the requirements of the Standard Specifications and comply with PROWAG. Use a contrasting color paving brick or panel to adjacent surfaces. Where existing manhole access lids are located on ramps within the area of the detectable warnings and the manhole lid cannot be removed or relocated, install a lid with a detectable warning surface in accordance with PROWAG.

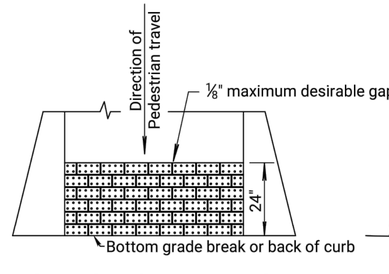
Cover the ramp width and 24" length with truncated dome surface, see examples Standard Drawing RD725 & RD725A. Saw cut (only) bricks or panels with not less than 25% of a full brick or panel installed. Place Truncated Dome Bricks or Panels to align parallel in the direction of pedestrian travel unless otherwise shown in the plans.

Prestressed or Composite Panels are installed in fresh concrete, Paver Bricks require mortar bed and mortar sand, see KDOT's Standard Specifications for information.

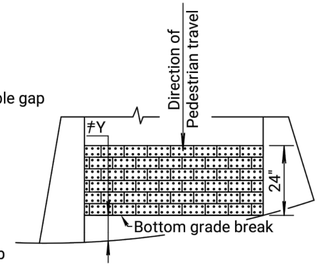
All work and materials needed to install detectable warnings will be paid for under the bid item "Sidewalk Ramps (Detectable Warning)".



⊗ CURB RADIUS DETAILS
Cut Prestressed Ramp Panels to fit.



⬓ STRAIGHT CURB DETAILS

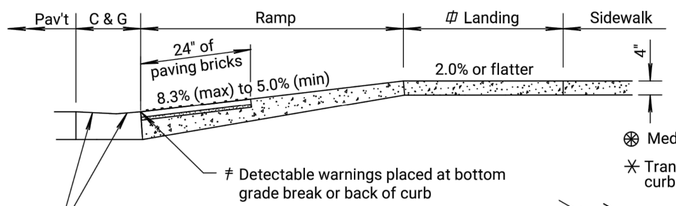


⬓ CURB RADIUS DETAILS

⬓ Installation shown for paving brick is running bond, use of other patterns is allowed with Engineer approval. Rotation 90° of Running Bond pattern is allowed to reduce space between bricks on curb radius installation, keep this space to a minimum. Place truncated domes on bricks in parallel alignment to pedestrian travel as shown.

⊗ Curb radius or greater than 5' ramp width will require more than one panel as approved by the Engineer. Limit number of panels installed at each site. Layouts shown are for example and may vary in the field.

ϒ Acceptable with no mixing of types within an installation.



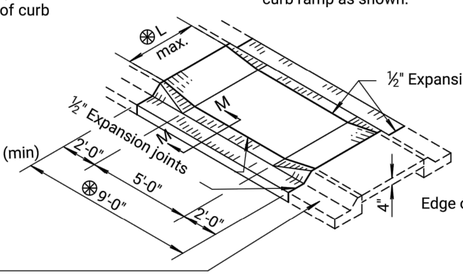
SECTION B-B

SECTION M-M

✳ Combined Curb & Gutter Type III (AE) unless shown otherwise on plans.

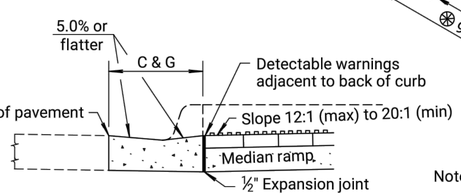
⊛ Median ramp crossing limits will be paid for as "Sidewalk Ramp."

✳ Transition Combined Curb & Gutter Type III (AE) through curb ramp as shown.

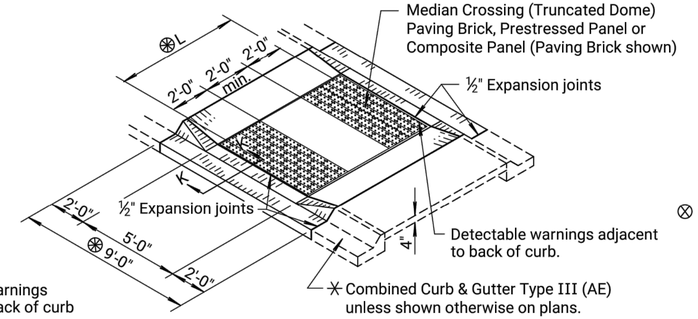


NARROW MEDIAN RAMP CROSSING
(L < 6'-0")

Note: A Median Ramp Crossing shall be constructed at Crosswalk locations. Do not install detectable warnings on narrow median ramp crossings.

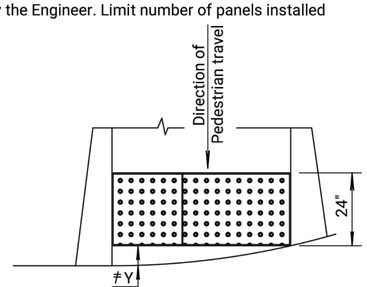


SECTION K-K



WIDE MEDIAN RAMP CROSSING
(L ≥ 6'-0")

Note: A Median Ramp Crossing shall be constructed at Crosswalk locations. Wider median islands will result in a 2' minimum gap between the detectable warning areas.



⊗ CURB RADIUS DETAILS (COMPOSITE)

Where truncated domes are placed through a curb radius, cut radius from 3'-0" long composite panel.

NO.	DATE	REVISIONS	BY	APP'D
5	2-23-17	Rev. Gen. Note & Panel Det.	T.T.R.	S.W.K.
4	2-10-10	Added Composite Panel	S.W.K.	J.O.B.
3	8-15-05	Added Prestressed Ramp Panel alt.	S.W.K.	J.O.B.
2	2-24-05	Class to Grade conc., wire reinf.	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

AUXILIARY DETAILS FOR SIDEWALK & STEPS

RD725A

FHWA APPROVAL	3-7-17	APP'D. SCOTT W. KING	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	15	50

AGGREGATE BASE (AB-1)(8")

LOCATION STA	LOCATION STA	(AB-1)(8") S.Y.	REMARK
349+15.00	352+80.00	2507	
TOTAL		2507	

GEOSYNTHETIC REINFORCEMENT (FOR BASE)

LOCATION STA	LOCATION STA	S.Y.	REMARK
349+15.00	352+80.00	2507	
TOTAL		2507	

CONCRETE PVMT. (6" UNIF.)(AE) ENTRANCES

LOCATION STATION	LOCATION SIDE	W	Y	APPROACH S.Y.	APRON S.Y.
349+36.80	LT	32.0	9.5	20.6	16.0
350+06.60	RT	23.0	5.0	15.6	
352+36.70	RT	18.0	5.0	12.8	
SUBTOTAL				49.0	16.0
TOTAL				65.0	

CONCRETE PAVEMENT (9" UNIF.)(AE)(NRDJ)

LOCATION STA	LOCATION STA	CONC. 9" S.Y.	REMARK
349+15.00	350+77.20	1004.5	
350+97.20	352+80.00	1104.5	
TOTAL		2109.0	

CONCRETE PAVEMENT (9" UNIF.)(AE)

LOCATION STA	LOCATION SIDE	CONC. 9" S.Y.	REMARK
350+77.20	CL	140.7	VALLEY GUTTER
351+10.95	LT	49.2	VALLEY GUTTER
TOTAL		189.9	

SIDEWALK RAMP

LOCATION STA	LOCATION SIDE	RAMP S.Y.	REMARK
350+91.60	LT	10.5	
351+30.50	LT	5.0	
351+45.60	LT	4.0	
351+50.15	RT	5.0	
TOTAL		24.5	

SIDEWALK CONSTRUCTION (4")(AE)

LOCATION STATION TO STATION	SIDE	WIDTH ft	SIDEWALK S.Y.
348+91.10 to 349+20.80	LT	9'-6"	29.8
349+15.00 to 349+70.60	RT	4'-7"	28.1
349+52.80 to 350+81.70	LT	VARIES	105.3
350+85.90 to 350+86.30	LT	VARIES	3.5
351+37.50 to 352+84.80	LT	5'	86.8
351+47.70 to 351+52.70	RT	5'	6.9
TOTAL			260.4

COMBINED CURB AND GUTTER (AE)

LEFT SIDE

LOCATION STA	LOCATION STA	TYPE I ft	TYPE II ft	REMARKS
348+91.10	349+18.30	27.20		
349+18.30	349+55.30		37.00	ENTRANCE
349+55.30	350+72.45	117.15		
350+72.45	350+92.45	32.20		RETURN
350+92.45		7.00		45.5' LT - 52.5' LT
351+29.45	351+49.45	32.20		RETURN
351+49.45	352+80.00	130.55		
SUBTOTAL		346.30	37.00	

RIGHT SIDE

LOCATION STA	LOCATION STA	TYPE I ft	TYPE II ft	REMARKS
349+15.00	349+92.60	77.60		
349+92.60	350+20.60		28.00	ENTRANCE
350+20.60	350+77.65	57.05		
350+77.65	350+97.65	32.20		RETURN
351+34.65		10.30		45.0' RT - 55.3' RT
351+34.65	351+54.65	32.20		RETURN
351+54.65	352+25.20	70.55		
352+25.20	352+48.20		23.00	ENTRANCE
352+48.20	352+80.00	31.80		
SUBTOTAL		311.70	51.00	
TOTAL		746.0		

CURB, EDGE (6")(AE)

LEFT SIDE

LOCATION STA	LOCATION STA	CURB ft	REMARKS
349+88.60	349+98.50	11.90	Part. Return
349+98.50	350+66.70	68.20	
350+66.70	350+86.30	32.70	Return
TOTAL		112.80	

RECAPITULATION OF ROAD QUANTITIES

ITEM	QUANTITY	UNIT
CONTRACTOR CONSTRUCTION STAKING	LUMP SUM	LUMP SUM
FIELD OFFICE AND LABORATORY (TYPE C)	1	EACH
MOBILIZATION	LUMP SUM	LUMP SUM
MOBILIZATION (DBE)	LUMP SUM	LUMP SUM
CLEARING AND GRUBBING	LUMP SUM	LUMP SUM
COMMON EXCAVATION (URB)	551	C.Y.
ROCK EXCAVATION	696	C.Y.
COMPACTION OF EARTHWORK (TYPE B)(MR-90)	28	C.Y.
WATER (GRADING) (SET PRICE)	1	M.GAL.
CURB & GUTTER, COMBINED (AE)	746	L.F.
CURB, EDGE (6")(AE)	113	L.F.
SIDEWALK CONSTRUCTION (4")(AE)	261	S.Y.
SIDEWALK RAMP	25	S.Y.
CONCRETE PAVEMENT (6" Uniform) (AE)	65	S.Y.
CONCRETE PAVEMENT (9" Uniform) (AE)	190	S.Y.
CONCRETE PAVEMENT (9" Uniform) (AE)(NRDJ)	2109	S.Y.
AGGREGATE BASE (AB-1)(8")	2507	S.Y.
WATER (AGGREGATE BASE) (SET PRICE)	1	M.GAL.
GEOSYNTHETIC REINFORCEMENT (FOR BASE)	2507	S.Y

EARTHWORK

STATION to STATION	EXCAVATION COMMON C.Y.	COMMON VMF	ROCK C.Y.	ROCK VMF	CONTR. FURN. C.Y.	COMPACTION TYPE A (MR-5-5) C.Y.	COMPACTION TYPE B (MR-90) C.Y.	COMPACTION TYPE C C.Y.	THROUGH CUTS NOT SUBGRADED COMM. C.Y.	THROUGH CUTS NOT SUBGRADED TYPE AA (MR-0-5) C.Y.	*EMBANKMENT C.Y. INITIAL CONSOL.	*EMBANKMENT C.Y. SETTLE-MENT	⚠PLACE. SELECT SOIL C.Y.
349+15.00 TO 352+80.00	551	0.78	696				28						
TOTALS	551		696				28						

†For Information Only * Subsidiary (see General Note). ⚠ See General Note.

FOR TEMP. PROJ. WATER POLLUTION CONTROL QUANT. SEE SHEET NO. 17
FOR SEEDING QUANTITIES SEE SHEET NO. 24
FOR PAVEMENT MARKING QUANTITIES SEE SHEET NO. 28
FOR SIGNING QUANTITIES SEE SHEET NO. 33
FOR TRAFFIC CONTROL QUANTITIES SEE SHEET NO. 47

NO.	DATE	REVISIONS	BY	APP'D

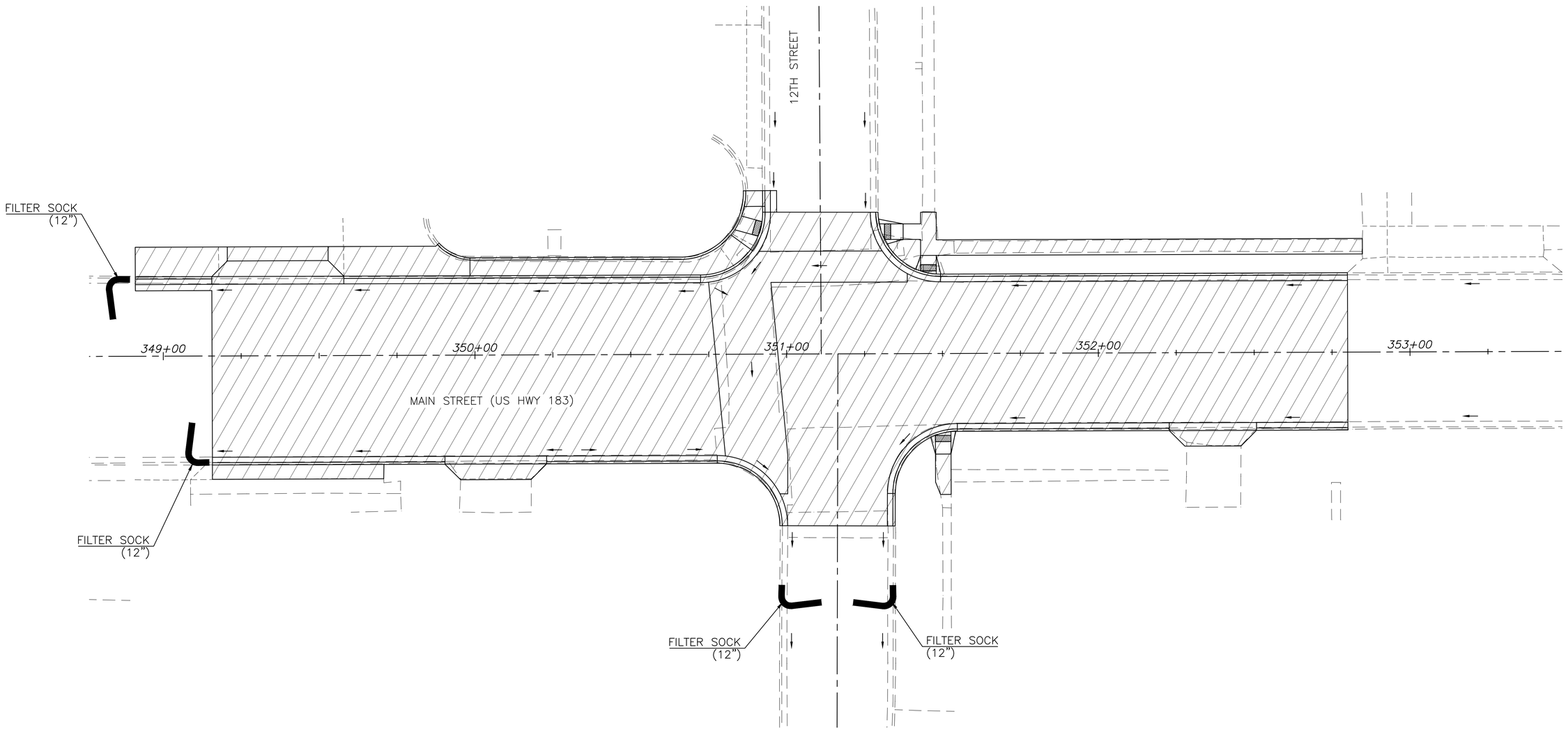
KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

FHWA APPROVAL		APP'D	
DESIGNED	DETAILED	QUANTITIES	CADD RLO
DESIGN CK.	DETAIL CK.	QUAN.CK.	CADD CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	16	50

N.T.S.



NOTE: PERMANENT SEEDING SHALL BE COMPLETED IMMEDIATELY AFTER PROJECT COMPLETION

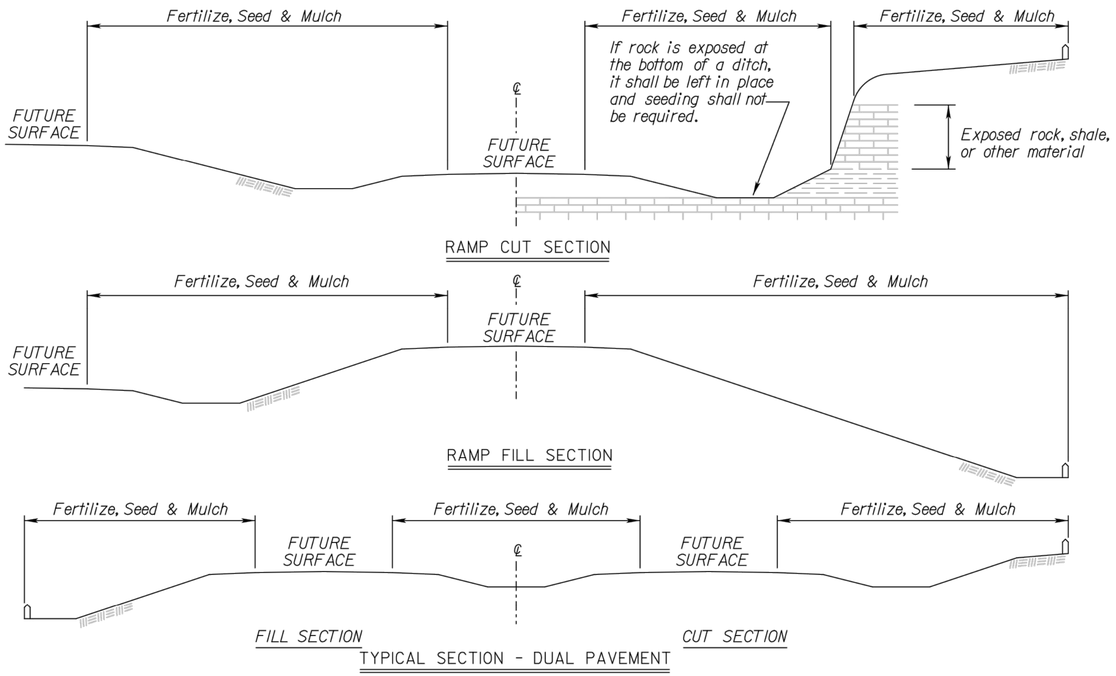
NO.	DATE	REVISIONS	BY	APP'D
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN

SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED	QUANTITIES	CADD PGF
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK. CEH

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	17	50



FERTILIZER: A ratio and application rate that equals or exceeds the required minimum rate per acre of N, P_2O_5, K_2O listed in Summary of Quantities will be acceptable.

- ** – N = Nitrogen Rate of Application*
- *** – P_2O_5 = Phosphorous Rate of Application*
- **** – K_2O = Potassium Rate of Application*

The Contractor will be required to finish areas of excavation, borrow and embankment in accordance with the specifications. Areas that require installation or construction of temporary water pollution control items will be finished in reasonable close conformity to the alignment, grade and cross section shown on the plans or as established by the Engineer.

CLT = Construction Limit Tract. This area is defined by the entire disturbed area of the project that requires seeding and erosion control measures to be placed. Any impervious areas (i.e. pavement, gravel, riprap, etc.) shall not be included in this measurement.

Slope = Defined by the area of the project that requires Class 1 erosion control material to be placed. This area shall be seeded using the Soil Erosion Mix prior to placement of the material. Drilling seed is preferred, however, broadcasting is acceptable if drilling is not possible.

Channel = Defined by the area of the project that requires Class 2 erosion control material to be placed. This area shall be seeded using the Soil Erosion Mix prior to placement of the material. Drilling seed is preferred, however, broadcasting is acceptable if drilling is not possible.

GENERAL NOTES

The entire disturbed area, excepting the paved or surfaced areas, steep rocky slopes and areas of undisturbed native sod or other desirable vegetation shall be fertilized (limed when required), seeded, and mulched. Soil preparation shall conform to the Standard Specifications.

Temporary seeding shall be done during any time of the year that the soil can be cultivated. After the temporary seeding has been completed on the entire project, permanent seeding shall be done during the normal seeding season.

MULCHING: Mulch shall be spread uniformly over all disturbed areas and punched in the soil, unless otherwise noted on the plans. The rate of application per acre, thickness in place, for the mulching materials is generally as follows:

1¾ – 2¼ Tons per Acre = 1½" loose depth spread uniformly over acre.

Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

Other vegetative mulches are acceptable only with the Engineer's concurrence.

The above rate is a guide. It will be at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.

NOTE: FINAL PROJECT SEEDING TO BE COMPLETED BY CITY OF LA CROSSE FUNDS AND FORCES.

SUMMARY OF SEEDING / EROSION CONTROL QUANTITIES

P.L.S. RATE/ ACRE		ACRES		BID ITEM	QUANTITY	UNIT
CLT	SL/CH	CLT	SL/CH			
				Temporary Fertilizer (* - ** - ***)		LB
				Temporary Seed (Canada Wildrye)		LB
				Temporary Seed (Grain Oats)		LB
				Temporary Seed (Sterile Wheatgrass)		LB
				Soil Erosion Mix		LB
				Erosion Control (Class 1, Type Y)		SQ YD
				Erosion Control (Class 2, Type Y)		SQ YD
				Sediment Removal (Set Price)	1	CU YD
				Synthetic Sediment Barrier		LF
				Temporary Berm (Set Price)	1	LF
				Temporary Seeding		LS
				Temporary Inlet Sediment Barrier		EACH
				Temporary Sediment Basin		CU YD
				Temporary Slope Drain		LF
				Temporary Stream Crossing		EACH
				Biodegradable Log (9")		LF
				Biodegradable Log (12")		LF
				Biodegradable Log (20")		LF
				Filter Sock (12")	60	LF
				Geotextile (Erosion Control)		SQ YD
				Silt Fence		LF
				SWPPP Design †		LS
				SWPPP Inspection †		EACH
				Water Pollution Control Manager †		EACH
900 lbs / acre				Mulch Tacking Slurry		LB
2 tons / acre				Mulching		TON
				Water (Erosion Control) (Set Price)	1	MGAL

NOTE: Projects less than 1 acre shall be bid as "Seeding" by the lump sum. See Permanent Seeding Summary of Seeding Quantities sheet LA850 for further details.

Geotextile (Erosion Control) shall be removed prior to placement of permanent slope protection.

Regreen and Quick Guard are the approved sterile wheatgrass products.

† If the total disturbed area of the project, not just the seeding area, is 1 acre or more, then these bid items must be included.

***** List size of material.*

The amount of mulch and mulch tacking slurry in the bid quantities is estimated. (Acres of Seeding X 1.5 X 2 Tons/Acre). The estimated quantity includes mulching associated with both temporary and permanent seeding operations. The total mulch and mulch tacking slurry required shall be determined in the field. The bid item for mulching and mulch tacking slurry shall be paid for according to the Standard Specifications.

Quantities for all erosion control items are estimated to give full flexibility for compliance with the NPDES permit. Final quantities will be determined in the field.

SOIL EROSION MIX

PLS RATE	NAME	QTY (lb)
	Total (lb)	

The Soil Erosion Mix is to be placed under the Class 1 and/or Class 2 erosion control material.

The Soil Erosion Mix consists of the Shoulder Area of the Permanent Seed Mix used on the project.

NO.	DATE	REVISIONS	BY	APP'D
3	08/03/20	Added Note	MRD	ML
2	12/01/17	Revised Standard	MRD	SHS
1	06/01/17	Revised Standard	MRD	SHS

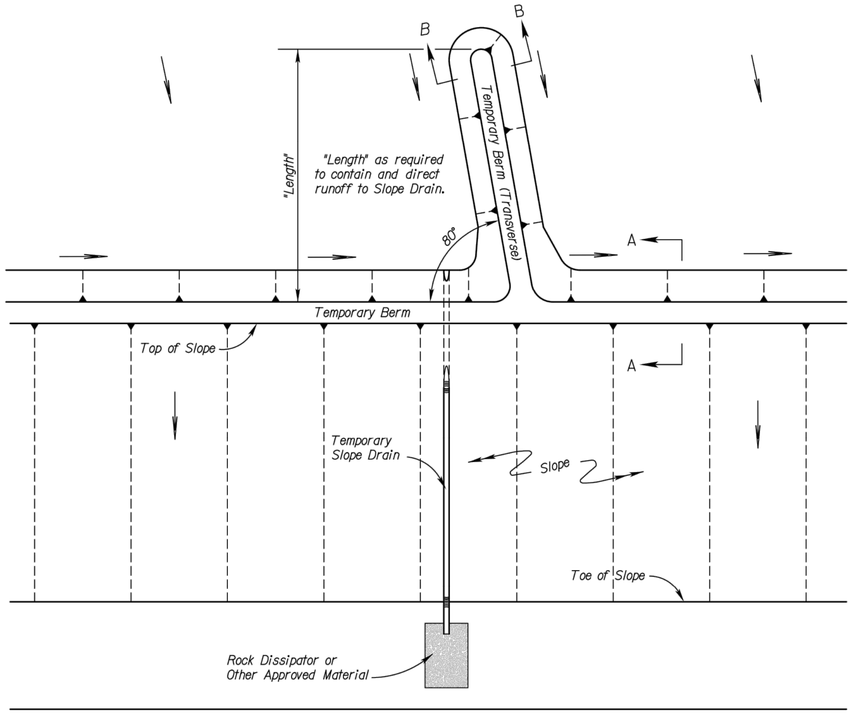
KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL

~~LA852A~~

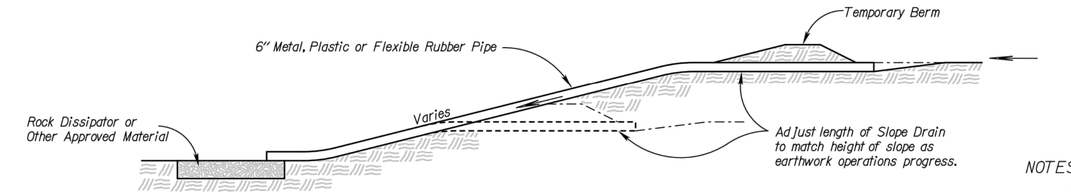
FHWA APPROVAL		1/26/2018	APP'D	Scott H. Shields	
DESIGNED	MRD	DETAILED	MRD	QUANTITIES	CADD
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN.CK.	CADD CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	18	50



TYPICAL PLAN VIEW OF TEMPORARY BERM AND TEMPORARY SLOPE DRAIN

NO SCALE



TYPICAL PROFILE OF TEMPORARY SLOPE DRAIN

NO SCALE

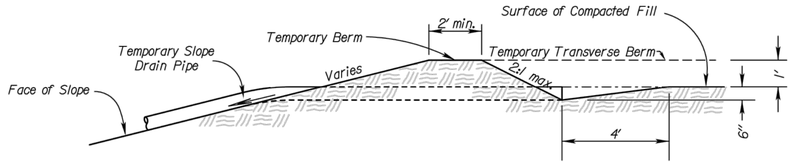
NOTES:

1) Temporary Slope Drain and Temporary Berm may be used on either project foreslopes or project backslopes.

2) Discharge of Slope Drains shall be into stabilized ditch or area, or into Sediment Basin.

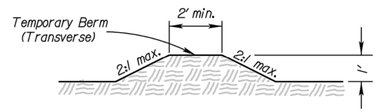
3) Pipe shall be secured in place as approved by Engineer.

4) Temporary Berms under 2,000 feet shall be bid by Set Price.



SECTION A-A

NO SCALE

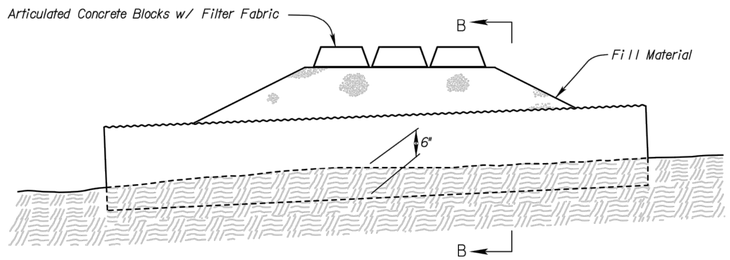


SECTION B-B

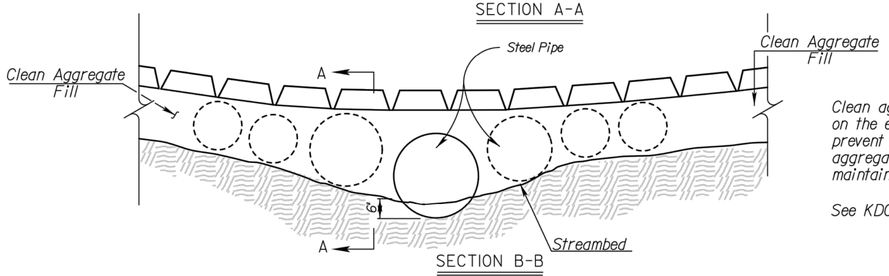
NO SCALE

TYPICAL PROFILE OF TEMPORARY BERM

NO SCALE



SECTION A-A



SECTION B-B

TEMPORARY STREAM CROSSING (ARTICULATED CONCRETE BLOCKS)

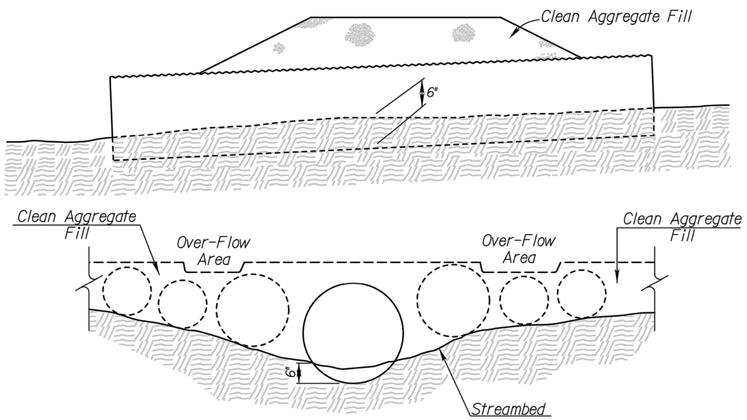
NO SCALE

Pipe size may vary.

Place 1 pipe buried 6" into stream bottom, in the lowest point of the channel to allow the passage of aquatic organisms, with additional pipes placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the crossing.

Clean aggregate fill will extend a minimum of 50' on the entrance and exit side of the crossing to prevent tracking. The aggregate shall be clean aggregate and a minimum of 6" thick and will be maintained through the use of the crossing.

See KDOT Specifications for more information.



SECTION B-B

TEMPORARY STREAM CROSSING (AGGREGATE)

NO SCALE

Pipe size may vary.

Place 1 pipe buried 6" into stream bottom, in the lowest point of the channel to allow the passage of aquatic organisms, with additional pipes placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the crossing.

Clean aggregate fill will extend a minimum of 50' on the entrance and exit side of the crossing to prevent tracking. The aggregate shall be clean aggregate and a minimum of 6" thick and will be maintained through the use of the crossing.

See KDOT Specifications for more information.

NO.	DATE	REVISIONS	BY	APP'D
3	1/21/22	Temp Stream Crossing - Clean Aggregate FillNote Added	MRD	ML
2	8/24/21	Temp Stream Crossing - Clean Aggregate FillNote Added	MRD	ML
1	6/11/13	Revised Standard	MRM	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

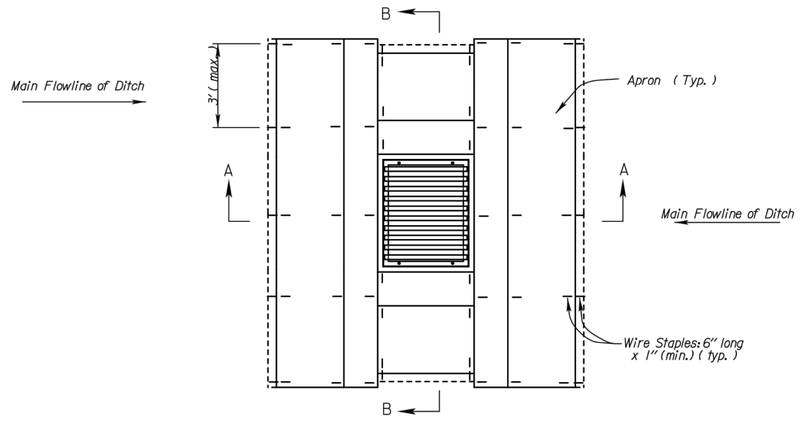
TEMPORARY EROSION AND POLLUTION CONTROL

TEMPORARY SLOPE DRAIN
TEMPORARY STREAM CROSSING (AGGREGATE)
TEMP. STREAM CROSS. (ARTC. CONC. BLOCKS)

LA852B

FHWA APPROVAL		1/21/2022	APP'D	Mervin Lare	
DESIGNED	ML	DETAILED	QUANTITIES	CADD	
DESIGN CK.	ML	DETAIL CK.	QUAN.CK.	CADD CK.	

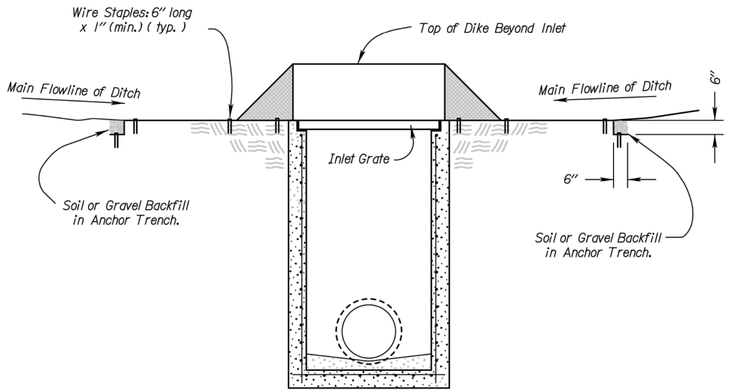
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	19	50



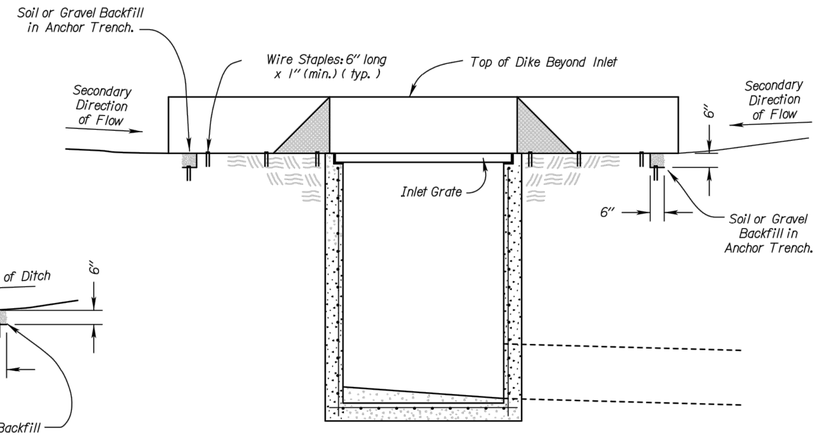
PLAN

TEMPORARY INLET SEDIMENT BARRIER
(TRIANGULAR SILT DIKE METHOD)

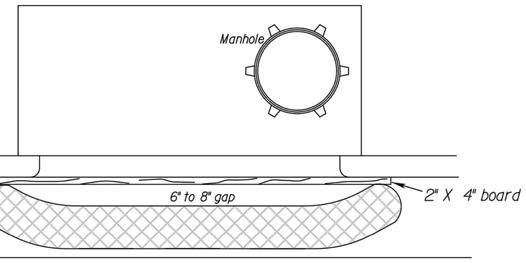
NO SCALE



SECTION A - A



SECTION B - B

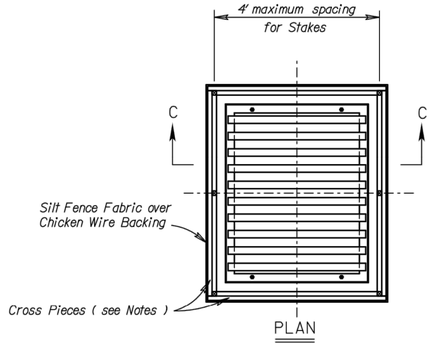


Bags = synthetic net (3mm mesh) or burlap bags

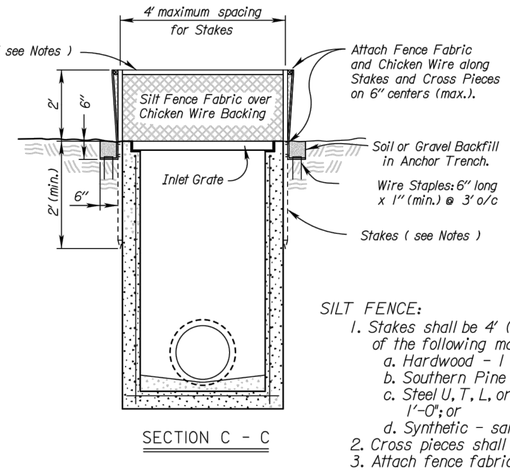
Rock = approximately 1" to 2" diameter

CURB INLET PROTECTION

1. If multiple gravel bags are required, place them in such a way that no gaps are evident.
2. Height of bags (8" minimum diameter) must not be above top of curb.
3. Alternative products may be used other than gravel bags such as the "Gutter Buddy". Products must be approved by the Engineer.
4. Curb inlet protection will be measured and paid for as Filter Sock.



PLAN



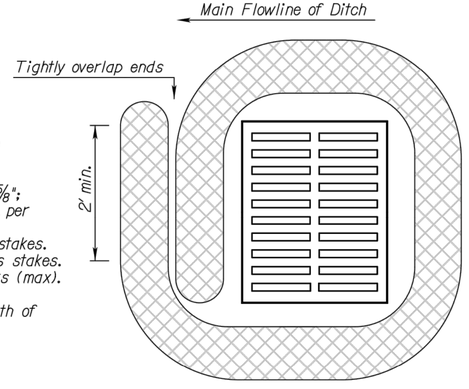
SECTION C - C

TEMPORARY INLET SEDIMENT BARRIER
(SILT FENCE METHOD)

NO SCALE

SILT FENCE:

1. Stakes shall be 4' (min.) long and of one of the following materials:
   a. Hardwood - 1 3/16" x 1 3/16";
   b. Southern Pine (No. 2) - 2 5/8" x 2 5/8";
   c. Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
   d. Synthetic - same strength as wood stakes.
2. Cross pieces shall be of same material as stakes.
3. Attach fence fabric securely on 6" centers (max).
4. Use of high flow material is acceptable.
5. Refer to plan sheets to estimate the length of silt fence required.



Drop inlet use
1'-6" TO 1'-8" diameter log

BIODEGRADABLE LOG/FILTER SOCK
DROP INLET PROTECTION

Note: 25% of log shall be keyed into ground during installation.

Stake every 4'

Material Requirements
Use 100% shredded mulch or other non-compost biodegradable material as fill for logs.
No compost or fines.
No hay or straw.
Do not use material which prohibits water infiltration.
Log Mesh: Use mesh with 1/4" openings or larger. Mesh must allow water infiltration but also hold fill material in place.

NO.	DATE	REVISIONS	BY	APP'D
3	9/26/19	Changed Direction of Main Flowline of Ditch Arrow	MRD	SHS
2	3/10/15	Revised Standard	RA	SHS
1	6/01/13	Revised Standard	MRM	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

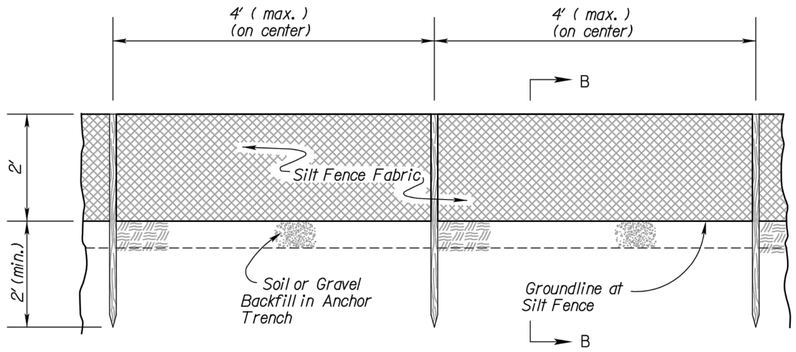
TEMPORARY EROSION AND POLLUTION CONTROL

TEMP. INLET SEDIMENT BARRIER (SILT FENCE)
TEMP. INLET SEDIMENT BARRIER (T.S.D.)
CURB INLET PROTECTION
DROP INLET PROTECTION

LA852C

FHWA APPROVAL		3/10/2015	APP'D	Scott H. Shields	
DESIGNED	RA	DETAILED	RA	QUANTITIES	CADD
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN.CK.	CADD CK.

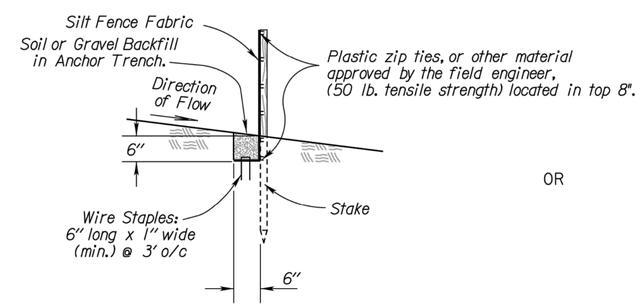
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	20	50



TYPICAL ELEVATION

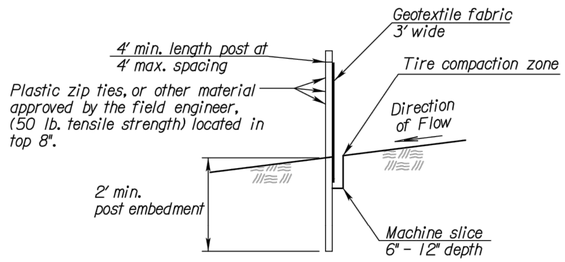
SILT FENCE BARRIER

NO SCALE

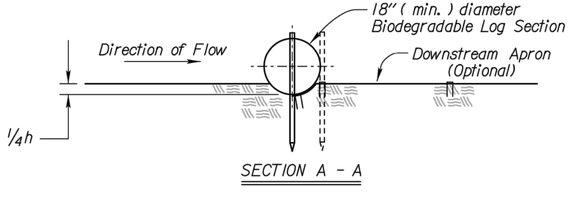


SECTION B-B

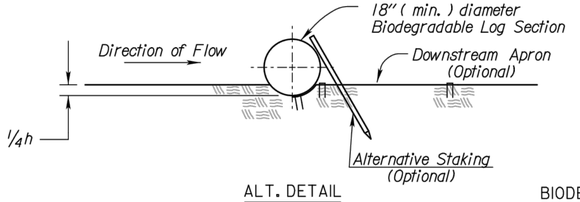
OR



SECTION B-B

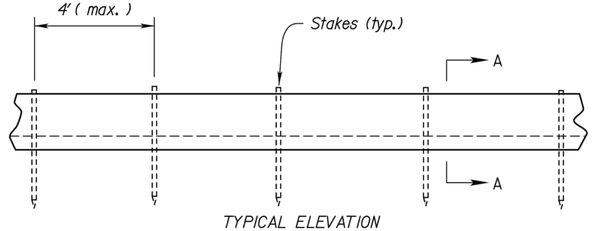


SECTION A - A



ALT. DETAIL

OPTIONAL



TYPICAL ELEVATION

BIODEGRADABLE LOG SLOPE INTERRUPTIONS

OR Filter Sock

INSTALLATION NOTES

SILT FENCE:

1. Stakes shall be 4' (min.) long and of one of the following materials:
   a. Hardwood - 1 3/16" x 1 3/16";
   b. Southern Pine (No. 2) - 2 5/8" x 2 5/8";
   c. Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
   d. Synthetic - same strength as wood stakes.
2. Attach fence fabric with 3 zip ties within the top 8" of the fence
   Alternate attachment methods may be approved by the Engineer on a performance basis.
3. Use of high flow material is acceptable.
4. Refer to plan sheets to estimate the length of silt fence required.

BIODEGRADABLE LOG OR FILTER SOCK

1. Place biodegradable logs or filter sock tightly together minimum overlap of 18".
2. Wood stakes shall be 2" x 2" (nom.).
3. Refer to plan sheets to estimate length of biodegradable log and filter sock required.
4. Each log or sock (except compost filter socks) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the sock and soil.
5. Length of stakes should be 2 times the height of the log at a minimum with minimum ground embedment equal to the height of the log / sock.

Biodegradable Log or Filter Sock Slope Interruptions

Slope Gradient	PRODUCT: 9" Sediment Log or 8" Filter Sock (ft)	12" Sediment Log or 12" Filter Sock (ft)	20" Sediment Log or 18" Filter Sock (ft)
≤4H:1V	40	60	80
3H:1V	30	45	60

Deviations should be approved by the Field Engineer.

	BIODEGRADABLE LOG MATERIAL	
	LOW FLOW	HIGH FLOW
9"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber
12"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber
18"-20"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber

GENERAL NOTES

1) Slope interruptions shall be placed along contour lines, with a short section turned upgrade at each end of the barrier.
2) The maximum length of the slope interruptions shall not exceed 250 feet, and the barrier ends need to be staggered.
3) Interruptions damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired immediately by Contractor at no additional cost to KDOT.
4) Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

NO.	DATE	REVISIONS	BY	APP'D
3	6/28/16	Revised Standard	RA	SHS
2	3/01/15	Revised Standard	RA	SHS
1	6/01/13	Revised Standard	MRM	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

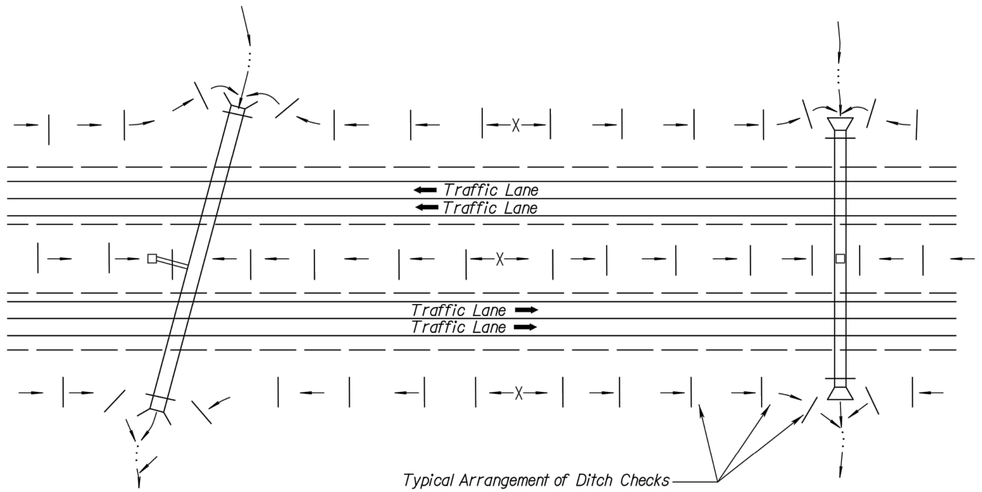
TEMPORARY EROSION AND POLLUTION CONTROL

SLOPE INTERRUPTIONS BIODEGRADABLE LOG / SILT FENCE

LA852D

FHWA APPROVAL		9/14/2016	APP'D	Scott H. Shields	
DESIGNED	SHS	DETAILED RA	QUANTITIES	CADD	
DESIGN CK.	SHS	DETAIL CK.	QUAN.CK.	CADD CK.	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	21	50



TYPICAL DITCH CHECK LAYOUT PLAN

NO SCALE

20" BIOLOG CHECK SPACING	
DITCH ℄ SLOPE (%)	SPACING INTERVAL (FEET)
1.0	*125*
2.0	*60*
3.0	*40*
4.0	*30*
5.0	*25*
NOTE: Use this spacing for all except Rock Ditch Checks.	

18" FILTER SOCK CHECK SPACING	
DITCH ℄ SLOPE (%)	SPACING INTERVAL (FEET)
1.0	*110*
2.0	*55*
3.0	*35*
4.0	*25*
5.0	*20*
NOTE: Use this spacing for all except Rock Ditch Checks.	

GENERAL NOTES

1) *The choice of ditch check methods is at the option of the Contractor.*

2) *Use only rock checks in situations where the ditch slope is 6 percent or greater.*

2) *Ditch checks damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired by Contractor at no extra cost to KDOT.*

NO.	DATE	REVISIONS	BY	APP'D
3	8/10/16	Revised Standard	RAA	SHS
2	6/28/16	Revised Standard	RAA	SHS
1	6/01/13	Revised Standard	MRM	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

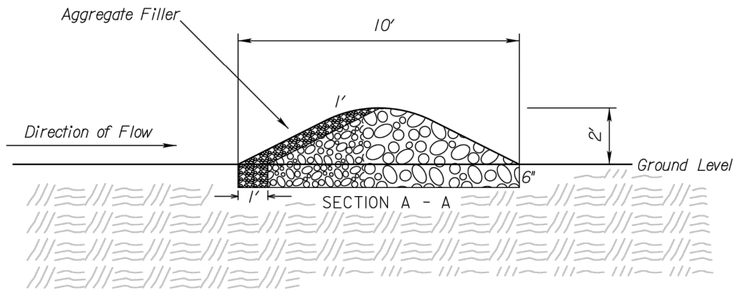
TEMPORARY EROSION AND POLLUTION CONTROL

DITCH CHECKS

LA852E

FHWA APPROVAL		9/14/2016	APP'D	Scott H. Shields	
DESIGNED	SHS	DETAILED	RAA	QUANTITIES	CADD RAA
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN.CK.	CADD CK. SHS

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	22	50



TYPICAL ELEVATION

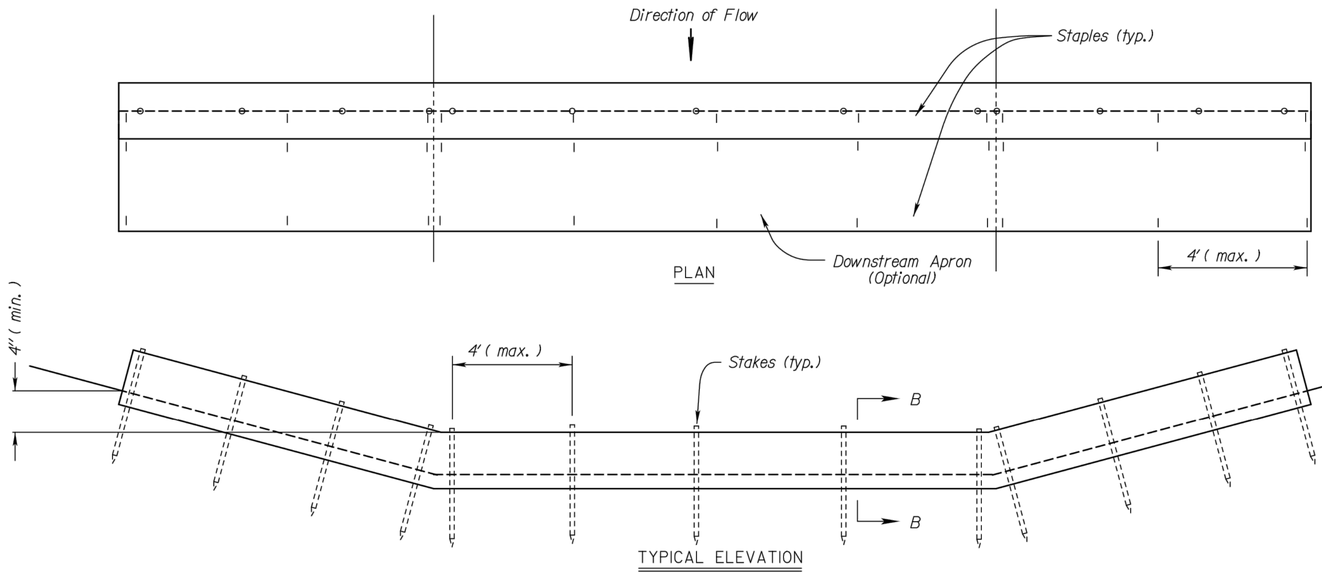
ROCK DITCH CHECK

NO SCALE

TEMPORARY ROCK DITCH CHECK SPACING	
DITCH ℄ SLOPE (%)	*SPACING INTERVAL (FEET)*
5.0	60
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29
NOTE: Use this spacing for Rock Ditch Checks only.	

ROCK DITCH CHECK NOTES

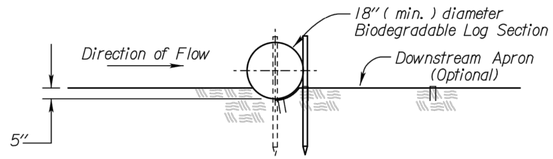
1. Rock shall be clean aggregate, D50-6" and aggregate filler.
2. Place rock in such manner that water will flow over, not around ditch check.
3. Do not use rock ditch checks in clear zone.
4. Excavation: The ditch area shall be reshaped to fill any eroded areas. Prior to placement of the rock, the ditch shall be excavated to the dimensions of the Rock Ditch Check and to a minimum depth of 6" (150mm). After placement of the rock, backfill and compact any over-excavated soil to ditch grade. This work shall be subsidiary to the bid item Temporary Ditch Check (Rock).
5. Aggregate excavated on site may be used as an alternate to the 6" rock, if approved by the Engineer.
6. The Engineer may approve the use of larger aggregates for the downstream portion of the check when conditions warrant their use.
7. When the use of larger rock is approved, D50-6" rock will be placed between the larger aggregate and the aggregate filler.
8. Aggregate filler will be placed on the upstream face of the ditch check. Aggregate filler will comply with Filter Course Type I, Division 1114.



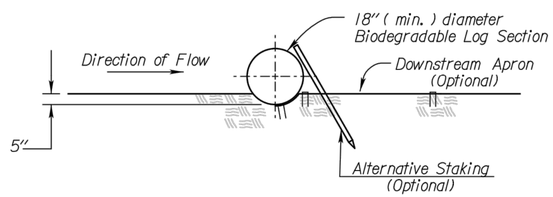
BIODEGRADABLE LOG DITCH CHECK

OR Filter Sock Ditch Check

NO SCALE



SECTION B - B



ALT. DETAIL
OPTIONAL

BIODEGRADABLE LOG DITCH CHECK NOTES

1. Use as many biodegradable log sections as necessary to ensure water does not flow around end of ditch check.
2. Overlap sections a minimum of 18".
3. Stakes shall be wood or steel according to Section 2114 of the Standard Specifications. Length of stakes shall be a minimum of 2 x the diameter of the log.
4. Use Erosion Control (Class 1) (Type C) as the downstream apron when required.
5. A downstream apron is required when directed by the Engineer. Apron material will be paid at the contract unit price.
6. Each log or sock (except compost filter socks) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the sock and soil.

NO.	DATE	REVISIONS	BY	APP'D
3	11/19/20	Revised Standard	MRD	ML
2	8/10/16	Revised Standard	RAA	SHS
1	10/21/15	Revised Standard	RAA	SHS

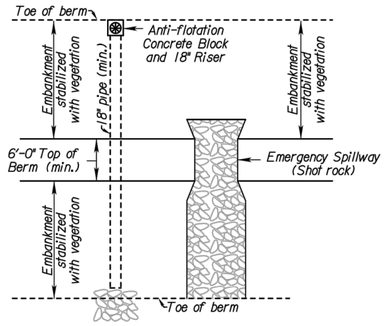
KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL
ROCK DITCH CHECKS
BIODEGRADABLE LOG DITCH CHECKS

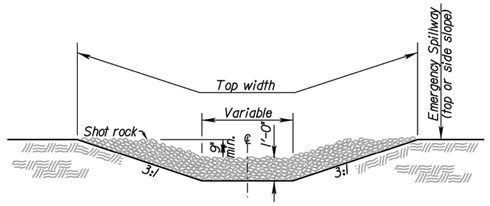
LA852G

FHWA APPROVAL			11/19/2020	APP'D		Mervin Lare	
DESIGNED	ML	DETAILED	DK	QUANTITIES		CADD	RAA
DESIGN CK.	ML	DETAIL CK.	ML	QUAN.CK.		CADD CK.	RAA

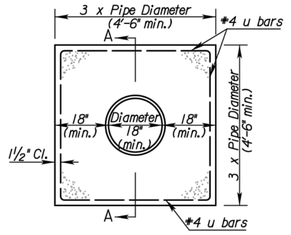
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	23	50



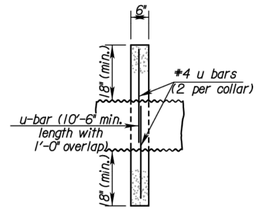
SEDIMENT STORAGE BASIN (PLAN)



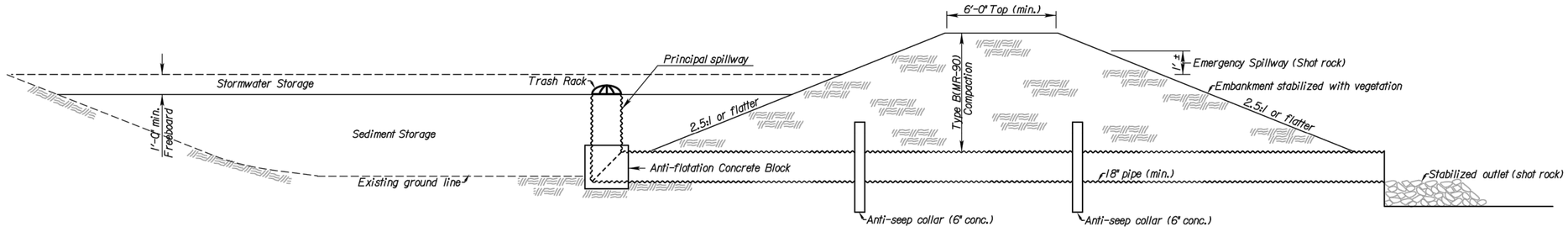
CROSS SECTION (EMERGENCY SPILLWAY)



CONCRETE ANTI-SEEP COLLAR



SECTION A-A



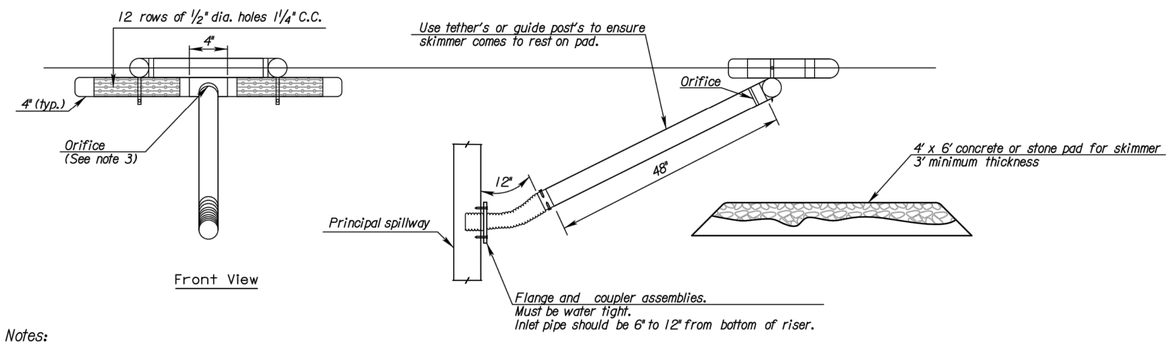
SEDIMENT STORAGE BASIN (ELEVATION)

NOTES:

1) Temporary Sediment Basins shall be constructed at locations as directed by the Engineer or as approved in the SWPPP Schedule. All work and materials necessary, including but not limited to, the fill material, compaction, drainage pipes, aggregates and all other incidentals necessary to construct the basin, shall be paid as "Temporary Sediment Basin".

2) Lengths and top dimensions shall be determined in the field by the Engineer.

3) Skimmer dewatering device required and must be used reguardless the size of the drainage area.



Notes:

1. All P.V.C. pipes are to be schedule 40.

2. HDPE flexible drain pipes is to be attached to the pond outlet structure with water-tight connections.

3. The orifice shall be sized of to provide drawdown time to 2 to 5 days and approved by the engineer.

4. Other skimmer designs maybe used that dewaters from the surface at a controlled rate. The design must be approved by the engineer.

SKIMMER DEWATERING DEVICE

SEDIMENT STORAGE BASIN LOCATIONS

STATION TO STATION	SIDE	REQUIRED STORAGE CAPACITY

NO.	DATE	REVISIONS	BY	APP'D
3				
2	9/3/13	Added Skimmer Dewatering Device	MRM	SHS
1	7/17/13	Revised Standard	MRM	SHS

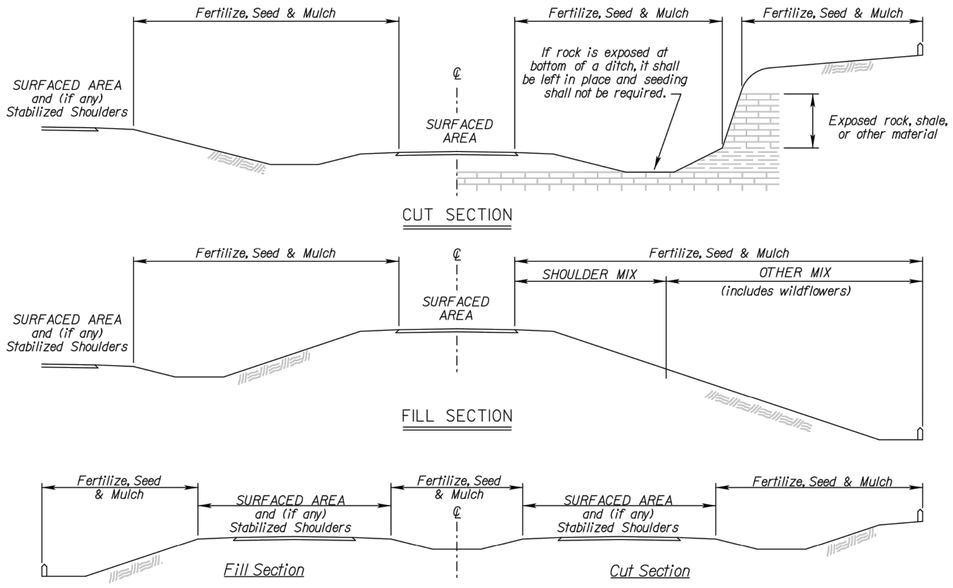
KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL

SEDIMENT STORAGE BASIN

LA852H

FHWA APPROVAL	09/24/2013	APP'D	Scott H. Shields		
DESIGNED	BB	DETAILED	BB	QUANTITIES	CADD BB
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN.CK.	CADD CK. SHS



TYPICAL SECTION - DUAL PAVEMENT

GRASS & WILDFLOWER SEEDING SEASONS

COOL SEASON GRASSES	WARM SEASON GRASSES & WILDFLOWERS
February 15 thru April 20 August 15 thru September 30	November 15 thru June 1
SPECIES	SPECIES
Bluegrasses	Bermuda Grass
Brome Grasses	Big Bluestem
Canada Wildrye	Blue Grama
Fescues	Buffalo Grass
Prairie Junegrass	Indiangrass
Ryegrasses	Little Bluestem
Sterile Wheatgrass	Sand Bluestem
Tall Dropseed	Sand Dropseed
Western Wheatgrass	Sand Lovegrass
	Side Oats Grama
	Switchgrass
	Wildflower Mixes

When the area to be seeded is 1 acre or more, if Cool Season grasses are mixed with Warm Season grasses, seed the area during the Warm Season.

When the area to be seeded is less than 1 acre, seed the area any time of the year.

SODDING SEASONS

COOL SEASON GRASSES	WARM SEASON GRASSES
March 1 thru April 15 September 1 thru November 15	May 15 thru September 1
SPECIES	SPECIES
Bluegrass Sod	Buffalo Grass Sod
Fescue Sod	

If the soil is workable, the Engineer may allow placement of sod between November 15 and March 1. If sod is placed during this time, maintain the sod until 20 days after the beginning of the spring sodding season.

NOTE: FINAL PROJECT SEEDING TO BE COMPLETED BY CITY OF LA CROSSE FUNDS AND FORCES.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	24	50

NOTE: There is no seasonal restriction for seeding projects less than 1 acre.

GENERAL NOTES

The entire disturbed area, excepting the paved or surfaced areas, steep rocky slopes and areas of undisturbed native sod or other desirable vegetation shall be fertilized (limed when required), seeded and mulched. Soil preparation shall conform to the Standard Specifications except as noted below.

All borrow areas shown on the plans are to be fertilized, seeded, and mulched. However, operation in borrow areas where crops are growing may be omitted when requested by the owner.

If temporary cover has provided stable slopes with no erosion, seed the permanent grasses into the existing cover. If there has been erosion that requires repair prior to seeding, then it may be necessary to regrade the area, resulting in bare ground.

FERTILIZER: A ratio and application rate that equals or exceeds the required minimum rate per acre of N, P_2O_5, K_2O listed in Summary of Seeding Quantities will be acceptable.

MULCHING: Mulch shall be spread uniformly over all disturbed areas and punched in the soil, unless otherwise noted on the plans. The rate of application per acre, thickness in place, for the mulching material is generally as follows:

1¾ - 2¼ Tons per Acre = 1½" loose depth spread uniformly over acre.

Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

Other vegetative mulches are acceptable only with the Engineer's concurrence.

The above rate is a guide. It will be at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.

NATIVE WILDFLOWER MIX 1

PLS RATE	NAME	QTY (lb)
0.3	Butterfly Milkweed	
0.3	Common Milkweed	
0.3	Black Eyed Susan	
0.5	Blanket Flower	
0.5	False Sunflower	
0.5	Lance-Leaf Coreopsis	
0.2	Maximilian Sunflower	
0.1	New England Aster	
0.2	Pinnate Prairie Coneflower	
0.2	Plains Coreopsis	
0.3	Purple Coneflower	
0.3	Upright Prairie Coneflower	
0.3	Dames Rocket	
0.3	Lemon Mint	
0.2	Pitcher Sage	
0.2	Wild Bergamot	
1.0	Illinois Bundleflower	
0.2	Common Evening Primrose	
0.1	Hoary Verbena	
0.8	Purple Prairie Clover	
0.3	Roundhead Lespedeza	
3.0	Showy Partridge Pea	
0.2	White Prairie Clover	
10.3	Total (lb)	

NATIVE WILDFLOWER MIX 2

PLS RATE	NAME	QTY (lb)
0.3	Butterfly Milkweed	
0.3	Black Eyed Susan	
0.5	Black Sampson Coneflower	
1.0	Blanket Flower	
0.2	Maximilian Sunflower	
0.2	Plains Coreopsis	
0.2	Upright Prairie Coneflower	
0.2	Western Yarrow	
0.3	Lemon Mint	
0.4	Pitcher Sage	
1.5	Illinois Bundleflower	
0.2	Common Evening Primrose	
1.0	Blue Wild Indigo	
0.4	Leadplant	
0.4	Purple Prairie Clover	
0.3	White Prairie Clover	
7.4	Total (lb)	

Package and deliver the wildflower seed separately from the grass seed mix. Package and deliver the Tall Drop Seed separately from the grass seed and the wildflower mix. Place the grass seed (except Tall Drop Seed) in the large seed box and drill (cover) seed ⅛" - ¼". Place the wildflower seed in a separate seed box and drill (cover) seed 1/16" maximum. Place the Tall Drop Seed in a separate (third) seed box and place the seed (using the seed drill) on the soil surface.

OPTION: Broadcast Tall Drop Seed on the soil surface.

SUMMARY OF SEEDING QUANTITIES

P.L.S. RATE/ACRE				ACRES				BID ITEM	QUANTITY	UNIT
SHLDR	OTHER			SHLDR	OTHER					
								Mulching *		

SHLDR = Seeded with the Shoulder Mix. Typically 15 feet for 2-lane roads and 30 feet for 4-lane roads. Includes outside roadsides, turfed portions of shoulders, and turfed portion of the median.

OTHER = Seeded with the "Other" Mix. Designated as all other turf areas, except the Shoulder. Usually includes a Native Wildflower Mix.

NOTE: Projects less than 1 acre shall be bid as "Seeding" by the lump sum. All disturbed areas shall be seeded, fertilized and mulched at the listed rate per acre. The acres are estimated.

Refer to the Standard Specifications, Division 900, Section 904 'Seeding', and Section 907 'Sodding', for the seeding and sodding seasons.

** See LA852A for mulching quantity. The quantity of mulch is estimated (Acres of Seeding X 1.5 X 2 Tons/Acre). The total mulch required shall be determined in the field. The bid item for mulching shall be paid for according to the Standard Specifications.*

NO.	DATE	REVISIONS	BY	APP'D
2	11/25/20	Updated Seeding / Sodding Periods Charts	MRD	ML
1	08/03/20	Revised Standard	MRD	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

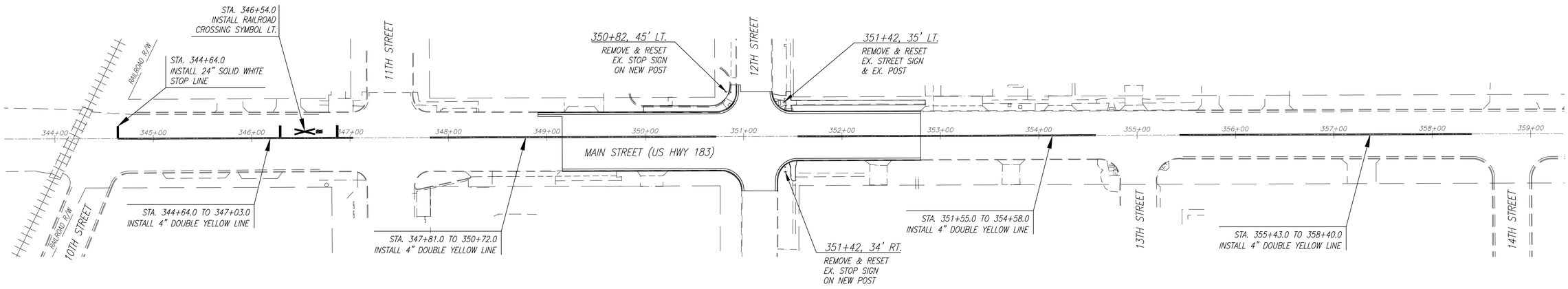
PERMANENT SEEDING
SUMMARY OF SEEDING QUANTITIES

~~LA850~~

FHWA APPROVAL	05/06/2019	APP'D	Mervin Lare
DESIGNED MRD	DETAILED MRD	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	QUAN.CK.	CADD CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	25	50

N.T.S.



NOTE: ALL DIMENSIONS GIVEN ARE TO CENTER OF MARKING

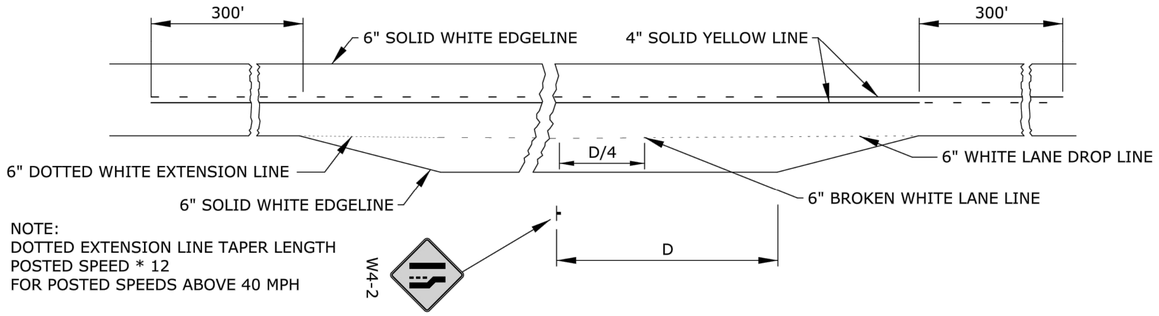
NO.	DATE	REVISIONS	BY	APP'D
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN

SHEET NO. OF	SCALE	APP'D		
DESIGNED	DETAILED	QUANTITIES	CADD	PGF
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.	CEH

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	26	50

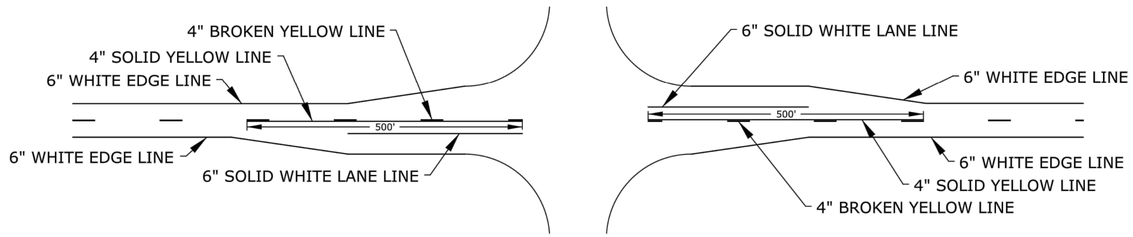


NOTE:
DOTTED EXTENSION LINE TAPER LENGTH
POSTED SPEED * 12
FOR POSTED SPEEDS ABOVE 40 MPH

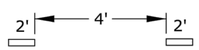
TYPICAL MARKING FOR AUXILIARY PASSING LANE

NOTE:
ALL PAVEMENT MARKINGS SHALL BE BROKEN AT CROSS ROADS.

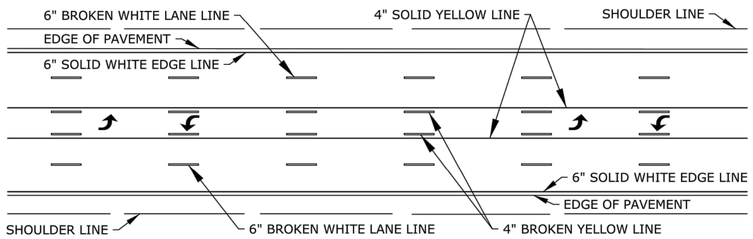
FOR HIGHWAY JUNCTIONS THE NO PASSING ZONE WILL EXTEND 1000' FROM INTERSECTION.



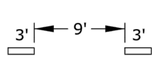
TYPICAL ROAD JUNCTION MARKINGS WITH BYPASS LANES



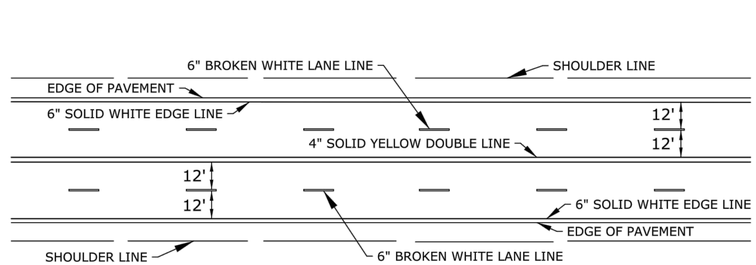
TYPICAL SPACING FOR DOTTED EXTENSION LINES, UNLESS OTHERWISE NOTED ON PLANS.



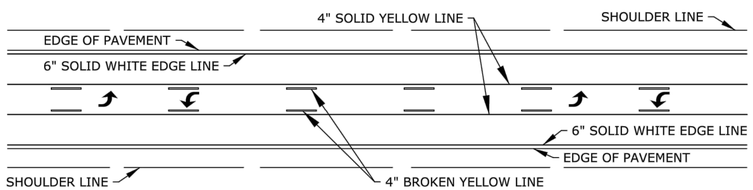
TWO-WAY LEFT TURN DETAIL FOR FIVE LANE ROADWAY



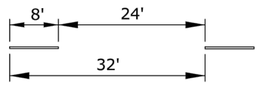
TYPICAL SPACING FOR LANE DROP. UNLESS OTHERWISE NOTED ON PLANS.



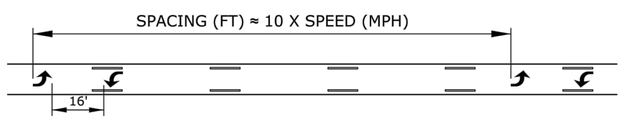
TYPICAL MARKINGS FOR FOUR LANE ROADWAY



TWO-WAY LEFT TURN DETAIL FOR THREE LANE ROADWAY

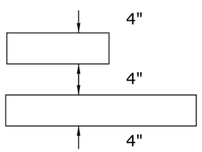


TYPICAL SPACING FOR BROKEN LINES UNLESS OTHERWISE NOTED ON PLANS

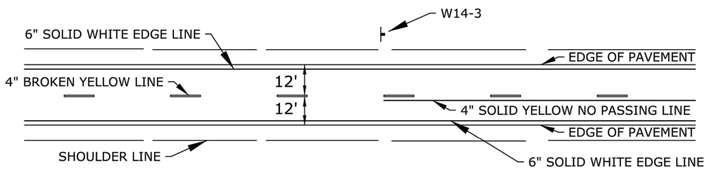


TWO-WAY LEFT TURN ARROW SPACING DETAIL

NOTE:
IF ARROWS ARE USED SPACE THE ARROWS AS SHOWN IN THE SPACING DETAIL.



TYPICAL SPACING FOR NO PASSING LINES UNLESS OTHERWISE NOTED ON PLANS



TYPICAL TWO LANE MARKINGS

NOTE:
LONGITUDINAL PAVEMENT MARKING LINES SHALL BE OFFSET A MINIMUM OF 2" FROM LONGITUDINAL PAVEMENT JOINTS.

NOTE:
ON NON I, US, AND K ROUTES, 4" EDGE LINES MAY BE INSTALLED.
6" EDGE LINES ARE NOT REQUIRED ON NON I, US, AND K ROUTES.

NO.	DATE	REVISIONS	BY	APP'D
3	5/25/12	Added Dotted Extension and Lane Drop Lines	B.A.H.	B.D.G.
2	9/20/05	Removed Aux. Passing Lane Dotted Ext. Line	J.F.F.	B.D.G.
1	7/26/05	New FHWA Approval Date	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

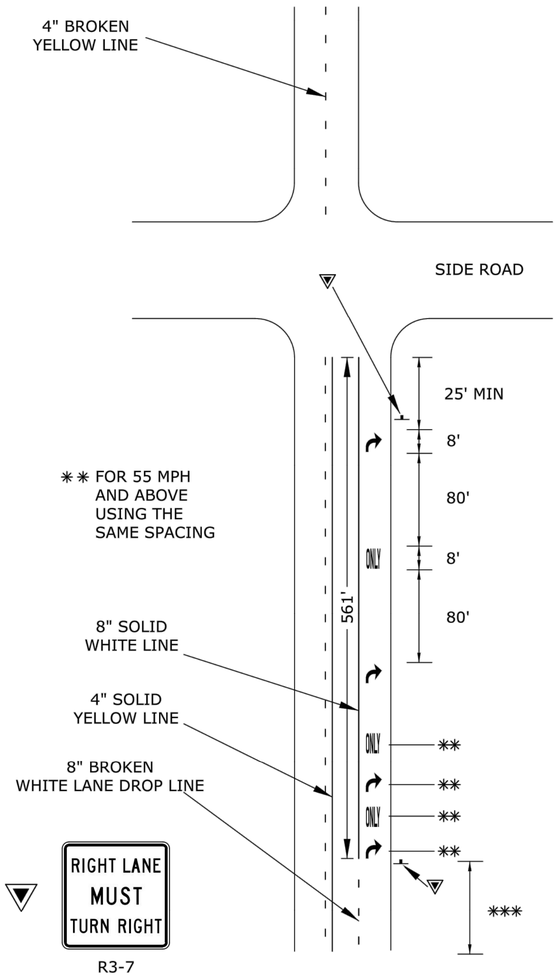
TYPICAL PAVEMENT MARKING DETAILS FOR UNDIVIDED ROADWAYS

TE308

FHWA APPROVAL			5/25/2012	APP'D	Brian D. Gower		
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES		TRACED	
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.		TRACE CK.	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	27	50

TYPICAL SIGNING AND MARKING FOR RIGHT LANE MUST TURN RIGHT



RAILROAD CROSSING MARKING

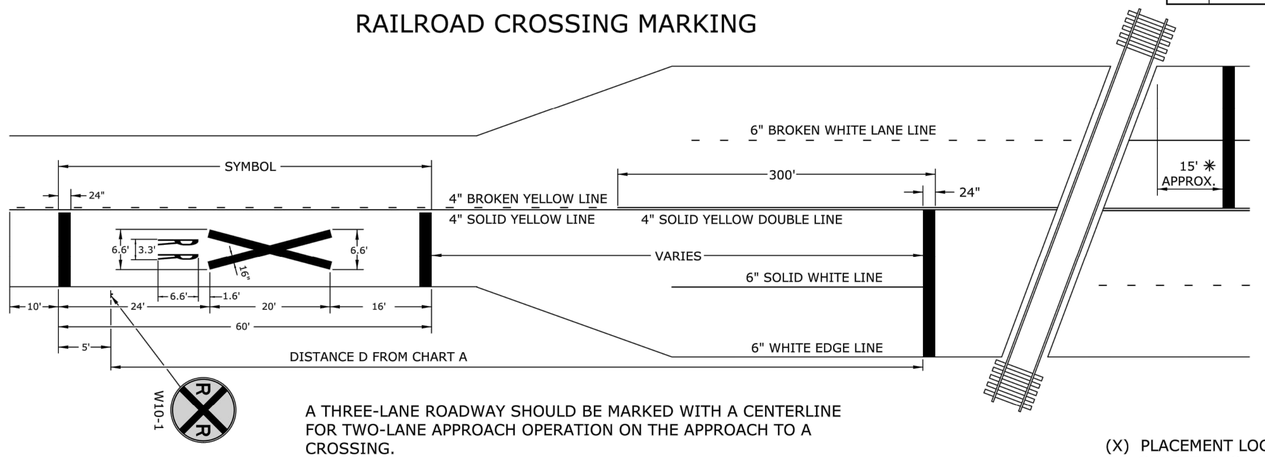


CHART "A"

SPEED MPH	DISTANCE D (feet)
75	850
70	750
65	650
60	550
55	450
50	375
45	300
40	225
35	150
30	(X)
25	(X)
20	(X)

ALL DISTANCES ARE MINIMUM.

A THREE-LANE ROADWAY SHOULD BE MARKED WITH A CENTERLINE FOR TWO-LANE APPROACH OPERATION ON THE APPROACH TO A CROSSING.
ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
REFER TO STANDARD ALPHABET FOR HIGHWAY SIGNS AND MARKINGS FOR R X R SYMBOLS DETAILS.

*STOP LINE 8' FROM NEAR EDGE OF GATE OR CANTILEVER, IF PRESENT.

NOTE:
ON NON I, US, AND K ROUTES, 4" EDGE LINES MAY BE INSTALLED.
6" EDGE LINES ARE NOT REQUIRED ON NON I, US, AND K ROUTES.

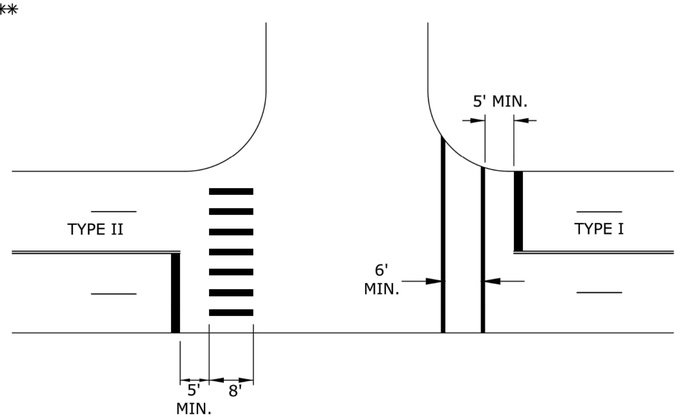
(X) PLACEMENT LOCATION IS DEPENDENT ON SITE CONDITIONS AND OTHER SIGNING TO PROVIDE ADEQUATE ADVANCE WARNING TO THE DRIVER

TYPICAL CROSSWALKS

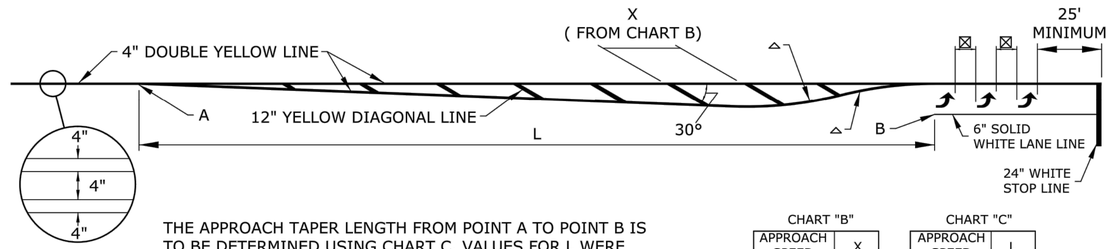
TYPE I: CROSSWALK LINES SHALL BE 12" SOLID WHITE LINES. THEY SHALL BE SPACED A MINIMUM OF 6' APART FROM INSIDE EDGE TO INSIDE EDGE.

TYPE II: THESE LINES SHOULD BE SOLID WHITE 24" WIDE PLACED PARALLEL TO THE DIRECTION OF TRAFFIC FLOW. THE LINE PLACEMENT IS DETERMINED BY LANE LINE,CENTER LINE, AND WHEEL PATH IN SUCH A MANNER AS TO MINIMIZE TRAFFIC WEAR. THE CROSSWALK WIDTH SHOULD BE NOT LESS THAN 8'. THE TRANSVERSE CROSSWALK LINES MAY BE ADDED.

WHEN REQUIRED, STOP LINES SHALL BE INSTALLED A MINIMUM OF 5' FROM CROSSWALKS.



TYPICAL APPROACH TAPER DETAIL



THE APPROACH TAPER LENGTH FROM POINT A TO POINT B IS TO BE DETERMINED USING CHART C. VALUES FOR L WERE CALCULATED USING THE EQUATIONS BELOW AND INCREASED TO THE NEXT HIGHER 5 MPH INCREMENT.

- SPEEDS < 45 MPH $L = \frac{W*S^2}{60}$
- SPEEDS = 45 MPH $L = W*S$

☒ IF ARROWS ARE USED AND UNLESS OTHERWISE SPECIFIED THE SPACE BETWEEN LINES SHOULD BE AT LEAST FOUR TIMES THE HEIGHT OF THE CHARACTERS FOR LOW SPEED ROADS BUT NOT MORE THAN TEN TIMES THE HEIGHT OF THE CHARACTERS, UNDER ANY CONDITIONS.

△ FOR SPEEDS LESS THAN OR EQUAL TO 40 MPH, R=150'.
FOR SPEEDS GREATER THAN OR EQUAL TO 45 MPH, R=300'.

CHART "B"

APPROACH SPEED	X
20 MPH	20'
25 MPH	25'
30 MPH	30'
35 MPH	35'
40 MPH	40'
45 MPH	45'
50 MPH	50'
55 MPH	55'
60 MPH	60'
65 MPH	65'
70 MPH	70'

CHART "C"

APPROACH SPEED	L
20 MPH	80'
25 MPH	125'
30 MPH	180'
35 MPH	245'
40 MPH	320'
45 MPH	540'
50 MPH	600'
55 MPH	660'
60 MPH	720'
65 MPH	780'
70 MPH	840'

NO.	DATE	REVISIONS	BY	APP'D
3	5/25/12	Updated Chart B and Lane Drop Lines	B.A.H.	B.D.G.
2	10/20/06	RR Xing Symbol Changed from 18° to 16°	T.L.H.	B.D.G.
1	9/20/05	Added 4" Solid Yellow Double Line to RRxing	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL MISCELLANEOUS PAVEMENT MARKING DETAIL SHEET

TE309

FHWA APPROVAL		7/26/2005	APP'D	Brian D. Gower	
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.	TRACE CK.

SUMMARY OF PAVEMENT MARKINGS

LOCATION	4" Solid WHITE Edge Line	6" Solid WHITE Edge Line	6" Broken WHITE Lane Line	6" Broken WHITE Lane Line (PCP)	6" Dotted WHITE Extension Line	6" Broken WHITE Lane Drop Line	6" Solid WHITE Lane Line	8" Broken WHITE Lane Drop Line	8" Solid WHITE Gore Line	8" Dotted WHITE Extension Line	12" Solid WHITE Diagonal Line	12" Solid WHITE Chevron Line	12" Solid WHITE Type I Crosswalk Line	24" Solid WHITE Type II Crosswalk Line	24" Solid WHITE Stop Line	4" Solid YELLOW Edge Line	4" Solid YELLOW Double Line	4" Solid YELLOW Line	4" Broken YELLOW Line	6" Solid YELLOW Edge Line	12" Solid YELLOW Diagonal Line
STA. 344+64.0															12						
STA. 344+64.0 TO 347+03.0																	239				
STA. 347+81.0 TO 350+72.0																	291				
STA. 351+55.0 TO 354+58.0																	303				
STA. 355+43.0 TO 358+40.0																	297				
TOTALS															12		1130				

RECAPITULATION OF QUANTITIES

ITEMS	TOTAL	UNITS
PAVEMENT MARKING (MULTI-COMPONENT) (YELLOW)(4")	2260	FT
PAVEMENT MARKING (MULTI-COMPONENT) (WHITE)(12")	12	FT
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE) (WHITE)(RAILROAD XING)	1	EA

SUMMARY OF WORD & SYMBOL MARKINGS

LOCATION							STOP	ONLY	X-ING	SCHOOL	70	435	24	400	18						
STA. 346+54.0																					1
TOTALS																					1

NOTE:
WORDS & SYMBOLS SHALL CONFORM TO THE LATEST EDITION OF "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" PRINTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

PRIOR TO COMMENCEMENT OF PAVEMENT MARKING WORK THE ENGINEER WILL ESTABLISH THE LIMITS FOR "NO PASSING" ZONES. THESE LIMITS SHALL BE USED FOR THE LOCATION OF "NO PASSING" LINES AND FOR THE COMPUTATION OF ACTUAL MARKING QUANTITIES FOR THIS LINE TYPE.

NOTE: FOR SPECIFIC PAVEMENT MARKING DETAILS AND DIMENSIONS SEE PLAN SHEETS

NOTE: ALL TOTALS REFLECT ACTUAL QUANTITY OF PAVEMENT MARKING MATERIALS REQUIRED.

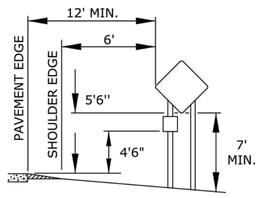
NO.	DATE	REVISIONS	BY	APP'D
2	5/25/12	Added Line Types, Symbols, and Shields	B.A.H.	B.D.G.
1	7/26/05	New FHWA Approval Date	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION
SUMMARY AND RECAPITULATION OF PAVEMENT MARKING QUANTITIES

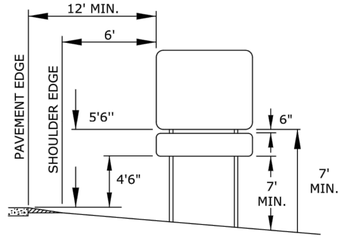
TE311

FHWA APPROVAL 5/25/2012		APP'D Brian D. Gower	
DESIGNED J.F.F.	DETAILED J.F.F.	QUANTITIES	TRACED
DESIGN CK. B.D.G.	DETAIL CK. B.D.G.	QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	29	50

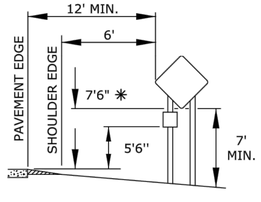


SHOULDER MOUNT



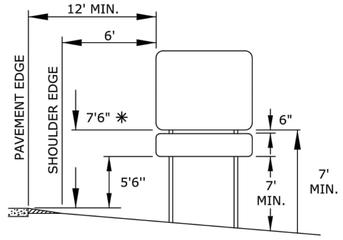
SHOULDER MOUNT

CONVENTIONAL ROADWAY



* - 8'6" WITH SECONDARY SIGN

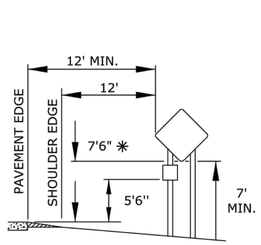
SHOULDER MOUNT



* - 8'6" WITH SECONDARY SIGN

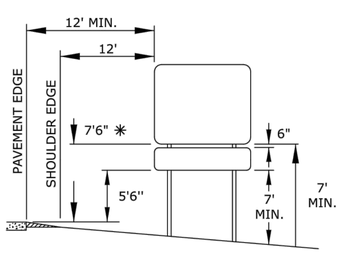
SHOULDER MOUNT

FREEWAY AND EXPRESSWAY ROADWAY
RAMPS AND SIDE ROADS



* - 8'6" WITH SECONDARY SIGN

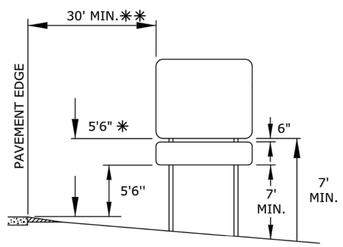
SHOULDER MOUNT



* - 8'6" WITH SECONDARY SIGN

SHOULDER MOUNT

FREEWAY AND EXPRESSWAY ROADWAY

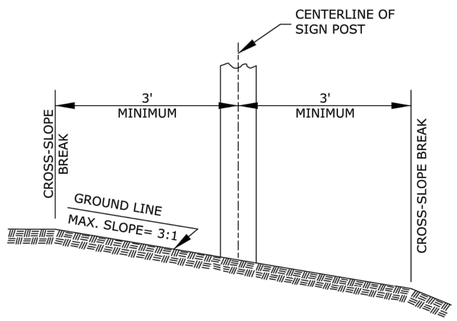


* - 8'6" WITH SECONDARY SIGN

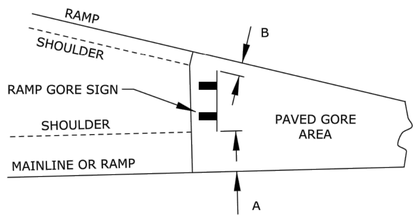
** - 60' MAX.

OFFSET MOUNT

FREEWAY AND EXPRESSWAY ROADWAY

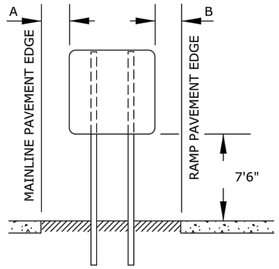


POST PLACEMENT CRITERIA
(CROSS-SLOPE BREAK)

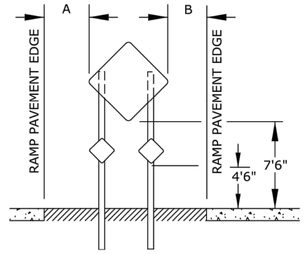


GORE TYPE	A (FT)	B (FT)
MAINLINE/ RAMP	6	3
RAMP/RAMP	3	3

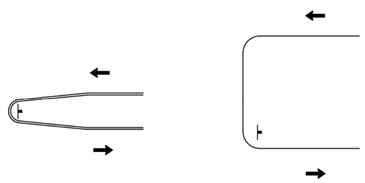
(DIMENSIONS ARE MINIMUMS)



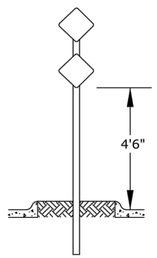
GORE INSTALLED SIGN
(MAINLINE/RAMP)



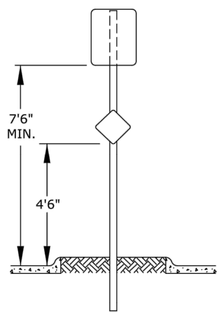
GORE INSTALLED SIGN
WITH TWO T1/OM'S
(RAMP/RAMP)



TYPICAL MEDIAN SIGN LOCATION



ONE OR TWO OM1-3



PRIMARY SIGN WITH OM1-3

NOTES:

THE OUTER EDGE OF THE SIGN, ON EXPRESSWAYS AND FREEWAYS, SHALL BE A MINIMUM OF 10 FEET FROM THE RIGHT OF WAY LINE.

IN BUSINESS, COMMERCIAL, OR RESIDENTIAL DISTRICTS WHERE LATERAL OFFSETS ARE LIMITED, A MINIMUM LATERAL CLEARANCE OF 2 FEET WITH A 7'6" MINIMUM MOUNTING HEIGHT MAY BE USED.

WHEN SIGNS ARE MOUNTED BEHIND GUARD FENCE, THE NEAR EDGE OF THE SIGN SHALL NOT EXTEND BEYOND THE BACK SIDE OF THE GUARD FENCE AND THE NEAREST SIGN POST SHALL BE A MINIMUM OF 5 FEET FROM THE FACE OF THE GUARD FENCE. THERE SHALL NOT BE ANY SHOULDER MOUNTED SIGNS LOCATED BETWEEN 100 FEET IN ADVANCE OF AND 50 FEET BEYOND THE NOSE OF THE GUARD FENCE.

WHEN SIGNS ARE MOUNTED IN A MEDIAN, THE LATERAL PLACEMENT SHOULD BE THE SAME AS A SHOULDER MOUNT. IF THE MEDIAN IS TOO NARROW FOR THIS PLACEMENT THE SIGN MAY BE PLACED A MINIMUM OF 2 FEET FROM THE BACK OF THE CURB, BUT IN NO CASE SHALL THE SIGN EDGE EXTEND BEYOND THE BACK EDGE OF THE CURB. SIGNS LOCATED AT THE MEDIAN NOSE SHOULD BE SET THE SAME DISTANCE FROM THE BACK OF THE CURB AS THE RADIUS OF THE MEDIA NOSE, BUT SHOULD NOT EXCEED THE DISTANCE OF THE SHOULDER MOUNT OR BE CLOSER THAN 2 FEET FROM THE BACK OF THE CURB.

THE GORE SIGN SHALL BE INSTALLED IN THE FOOTING BLOCKOUT IN THE PAVED GORE AREA. IF NO BLOCKOUT IS PROVIDED, THEN LOCATE THE GORE SIGN AT THE PLAN STATION. THE EDGES OF THE GORE SIGN SHALL NOT EXTEND BEYOND THE SHOULDER EDGE. THE MINIMUM DISTANCE FROM THE POST CENTERLINE TO THE BACK EDGE OF THE PAVED GORE AREA IS 3 FEET.

ADJUSTMENTS:

SIGNS MAY BE MOVED LATERALLY OR LONGITUDINALLY IF IT WILL IMPROVE THE VISIBILITY OF THE SIGN OR OTHER SIGNS AND IF IT WILL PROTECT THE SIGN MORE.

THE MAXIMUM ALLOWABLE LONGITUDINAL ADJUSTMENTS OF SIGNS ARE:

- ADVANCE GUIDE - 1320 FEET
- SUPPLEMENTAL GUIDE - 1320 FEET
- MOTORIST SERVICE - 1320 FEET
- EXIT DIRECTION - 100 FEET
- MILEAGE - 2640 FEET
- MERGE OR ANY SIGNS IN AN INTERCHANGE - 50 FEET
- MILEPOST - 50 FEET

IF ANY SIGN WITH A DISTANCE IS LONGITUDINALLY ADJUSTED, THE DISTANCE TO THE DESTINATION SHALL BE CHECKED AND MODIFIED AS NEEDED.

THE MINIMUM SPACING BETWEEN GUIDE SIGNS ON AN EXPRESSWAY OR FREEWAY IS 800 FEET.

THE MINIMUM SPACING BETWEEN SIGNS ON A RAMP OR CONVENTIONAL ROADWAY IS 100 FEET.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS FOR MOUNTING HEIGHTS LATERAL OFFSETS AND LONGITUDINAL ADJUSTMENTS

~~TE406~~ 7/1/03

FHWA APPROVAL			7/22/2003	APP'D	Steven A. Buckley		
DESIGNED	D.D.G.	DETAILED	W.S.B.	QUANTITIES		TRACED	
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.		TRACE CK.	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	30	50

SUMMARY OF QUANTITIES

SIGNS

TYPE	NUMBER	SQUARE FEET
FLAT SHEET		
REINFORCED PANEL		
OVERLAY		

DELINEATORS

TYPE	FLEXIBLE DELINEATOR		RIGID DELINEATOR	
	TYPE I ANCHOR	TYPE III ANCHOR	"U" POST	BRACKET MOUNT
TYPE 'A' WHITE				
TYPE 'A' YELLOW				
TYPE 'B' WHITE				
TYPE 'B' YELLOW				
TYPE 'A' WHITE (BACK TO BACK)				
TYPE 'A' YELLOW (BACK TO BACK)				

OBJECT MARKERS

TYPE		NUMBER
TYPE 2 ("U" POST)		
TYPE 3 ("U" POST)		
INFORMATION ONLY	OM3-L	
	OM3-R	
	OM3-C	
TYPE 3 ("U" POST) (BACK TO BACK)		

POSTS AND ALUMINUM BEAMS

	4" x 6" POST			3I2.25 ALUMINUM BEAM	"U" POST		GALVANIZED STEEL BEAM POST						PERFORATED SQUARE STEEL TUBE (PSST)			
	WOOD		STEEL				W6x9		W10x12		W10x22					
	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LBS/FT	3 LBS/FT	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	1-3/4"	2"	2-1/4"	2-1/2"
NUMBER																2
FEET																24

POST FOOTINGS AND BRACKETS

	CONCRETE FOOTING (DIA.)					PERFORATED SQUARE STEEL					
	WOOD	A36 STEEL		A572 STEEL (ALT)		TUBE FOOTING				BRACKET	
	18"	24"	30"	24"	30"	1-3/4"	2"	2-1/4"	2-1/2"	1-3/4"	2"
NUMBER									2		
FEET											

BASE PLATES AND STUB POSTS

	W6x9		W10x12		W10x22	
BREAKAWAY BASES	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)
BASE PLATE (TOP)						
STUB POST WITH BASE PLATE						
NON-BREAKAWAY BASES						
BASE PLATE						

REMOVALS

TYPE	NUMBER
SIGNS	
POSTS	2
FOOTINGS	
SIGN STRUCTURES	

NUMBER & LENGTHS OF POSTS & ALUMINUM BEAMS (INFORMATION ONLY)

LENGTH OF POST OR BEAM	4" x 6" POST			3I2.25 ALUMINUM BEAM	"U" POST		GALVANIZED STEEL BEAM POST						PERFORATED SQUARE STEEL TUBE (PSST)			
	WOOD		STEEL				W6x9		W10x12		W10x22					
	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LBS/FT	3 LBS/FT	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	1-3/4"	2"	2-1/4"	2-1/2"
2.1' - 4'																
4.1' - 6'																
6.1' - 8'																
8.1' - 10'																
10.1' - 12'																24
12.1' - 14'																
14.1' - 16'																
16.1' - 18'																
18.1' - 20'																
20.1' - 22'																
22.1' - 24'																
24.1' - 26'																
26.1' - 28'																
28.1' - 30'																
30.1' - 32'																

SIGN STRUCTURES

TYPE	NEW	MODIFIED	REMOVE AND RESET	RESET
OVERHEAD STRUCTURE				
CANTILEVER STRUCTURE				
BUTTERFLY STRUCTURE				
BRIDGE MOUNT ATTACHMENT				
MAST ARM SIGN SUPPORT				
SINGLE TAPERED TUBE SIGN SUPPORT				

NO.	DATE	REVISIONS	BY	APP'D
2	10/01/19	Revised Tables	D.D.G.	E.W.N.
1	7/23/10	Revised Tables	D.D.G.	D.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
FOR
INSTALLATIONS AND REMOVALS

TE439 7/1/03

FHWA APPROVAL		10/01/2019	APP'D	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	K.D.S.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	31	50

SUMMARY OF QUANTITIES

REMOVAL AND RESETTING OF SIGNS ON PROJECT

EXISTING PLAN STATION NUMBER	NEW PLAN STATION NUMBER	SIGN TYPE	SIGN SIZE
350+87.0 LT.	350+82.0 LT.	STOP	EXISTING
351+42.0 LT.	351+42.0 LT.	STREET	EXISTING
351+42.0 RT.	351+42.0 RT.	STOP	EXISTING

EXISTING PLAN STATION NUMBER	NEW PLAN STATION NUMBER	SIGN TYPE	SIGN SIZE

EXISTING PLAN STATION NUMBER	NEW PLAN STATION NUMBER	SIGN TYPE	SIGN SIZE

EXISTING PLAN STATION NUMBER	NEW PLAN STATION NUMBER	SIGN TYPE	SIGN SIZE

NO.	DATE	REVISIONS	BY	APP'D

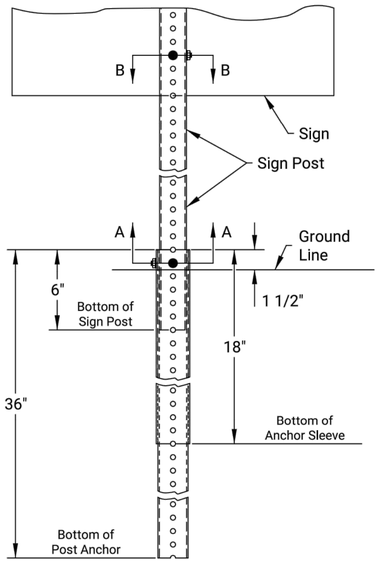
KANSAS DEPARTMENT OF TRANSPORTATION

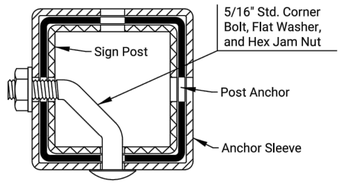
SUMMARY OF QUANTITIES
FOR REMOVAL AND RESETTING
OF SIGNS

TE445 7/1/03

FHWA APPROVAL			7/22/2003	APP'D	Steven A. Buckley		
DESIGNED	D.D.G.	DETAILED	K.D.S.	QUANTITIES		TRACED	
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.		TRACE CK.	

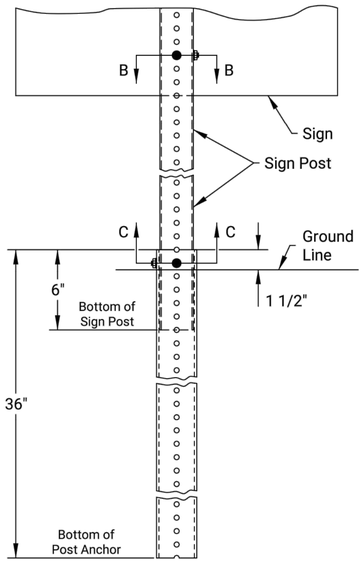
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	32	50

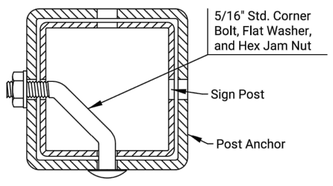




SECTION A-A

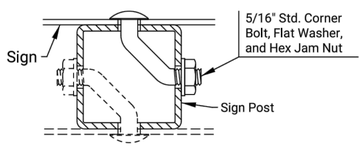
1 ¾", 2", OR 2 ¼" PSST SIGN POST





SECTION C-C

2 ½" PSST SIGN POST



SECTION B-B

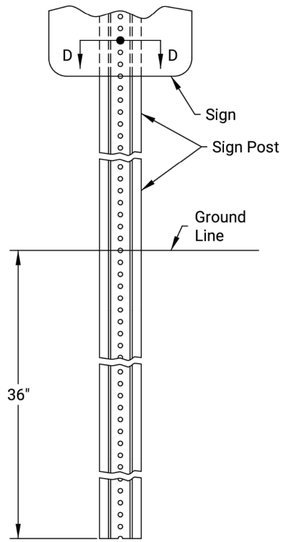
MATERIALS TABLE FOR SIGN POST AND FOOTING		
SIGN POST 12 GA. OR 14 GA.	FOOTING	
	POST ANCHOR	ANCHOR SLEEVE
1 ¾" X 1 ¾"	2" X 2" X 12 GA.	2 ¼" X 2 ¼" X 12 GA.
2" X 2"	2 ¼" X 2 ¼" X 12 GA.	2 ½" X 2 ½" X 12 GA.
2 ¼" X 2 ¼"	2 ½" X 2 ½" X 12 GA.	3" X 3" X 7 GA.
2 ½" X 2 ½"	3" X 3" X 7 GA.	Not Required

NOTE: 14 ga. posts must meet a certified minimum yield strength of 60,000 p.s.i.

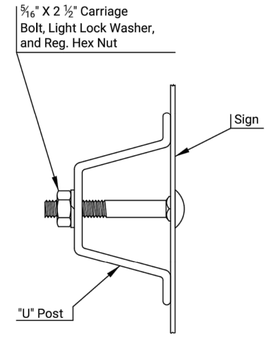
INSTALLATION PROCEDURES

1. Plumb and drive post anchor into the ground 18", if anchor sleeve is required, or to the specified height above the ground line.
2. Install anchor sleeve (if required) on the post anchor and align the first holes above the ground line. Plumb and drive post anchor with anchor sleeve into the ground to the specified height above the ground line.
3. Install sign post into the post anchor.

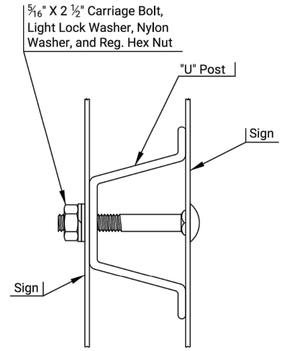
PERFORATED SQUARE STEEL TUBE POST (PSST)



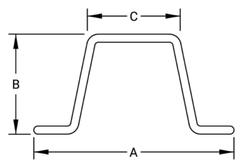
TYPICAL



SECTION D-D (TYPICAL)



SECTION D-D (BACK TO BACK)



DIM.	2 LBS/FT	3 LBS/FT
A	3 1/8 "	3 1/2 "
B	1 17/32 "	1 3/4 "
C	1 1/4 "	1 5/8 "

(Dimensions are nominal)

"U" POST

STEEL "U" POST

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS FOR PERFORATED SQUARE STEEL TUBE POSTS (PSST) AND STEEL "U" POSTS

TE466 10/01/19

FHWA APPROVAL			10/01/2019	APP'D	Eric W.Nichol		
DESIGNED	D.D.G.	DETAILED	D.D.G.	QUANTITIES		TRACED	
DESIGN CK.	E.W.N.	DETAIL CK.	E.W.N.	QUAN. CK.		TRACE CK.	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	33	50

RECAPITULATION OF SIGNING & DELINEATION BID ITEMS

BID ITEMS	APPROXIMATE QUANTITIES		UNITS
SIGN (FLAT SHEET) (HIGH PERFORMANCE)			SQUARE FOOT
SIGN (REINFORCED PANEL) (HIGH PERFORMANCE)			SQUARE FOOT
SIGN (OVERLAY) (HIGH PERFORMANCE)			SQUARE FOOT
SIGN POST (4" x 6" WOOD) (FLAT SHEET SIGN)			LINEAR FOOT
SIGN POST (4" x 6" WOOD) (REINFORCED PANEL SIGN)			LINEAR FOOT
SIGN POST (2 LB/FT "U" STEEL)			LINEAR FOOT
SIGN POST (3 LB/FT "U" STEEL)			LINEAR FOOT
SIGN POST (1-3/4" PERFORATED SQUARE STEEL TUBE)			LINEAR FOOT
SIGN POST (2" PERFORATED SQUARE STEEL TUBE)			LINEAR FOOT
SIGN POST (2-1/4" PERFORATED SQUARE STEEL TUBE)			LINEAR FOOT
SIGN POST (2-1/2" PERFORATED SQUARE STEEL TUBE)	24		LINEAR FOOT
SIGN POST (4" X 6" STRUCTURAL STEEL)			LINEAR FOOT
SIGN POST (3 I 2.25 ALUMINUM)			LINEAR FOOT
	A36	A572(ALT)	
SIGN POST (W6X9 STEEL BEAM)			LINEAR FOOT
SIGN POST (W10X12 STEEL BEAM)			LINEAR FOOT
SIGN POST (W10X22 STEEL BEAM)			LINEAR FOOT
SIGN POST STUB WITH BREAKAWAY BASE PLATE (W6X9)			EACH
SIGN POST STUB WITH BREAKAWAY BASE PLATE (W10X12)			EACH
SIGN POST STUB WITH BREAKAWAY BASE PLATE (W10X22)			EACH
SIGN POST BREAKAWAY BASE PLATE (W6X9)			EACH
SIGN POST STUB WITH BREAKAWAY BASE PLATE (W10X22)			EACH
SIGN POST BREAKAWAY BASE PLATE (W6X9)			EACH
SIGN POST BREAKAWAY BASE PLATE (W10X12)			EACH
SIGN POST BREAKAWAY BASE PLATE (W10X22)			EACH
SIGN POST FOOTING (24" Dia. CONCRETE)(STEEL BEAM POST)			LINEAR FOOT
SIGN POST FOOTING (30" Dia. CONCRETE)(STEEL BEAM POST)			LINEAR FOOT
SIGN POST FOOTING (18" Dia. CONCRETE)(WOOD POST)			LINEAR FOOT
SIGN POST FOOTING (1-3/4" PERFORATED SQUARE STEEL TUBE)			EACH
SIGN POST FOOTING (2" PERFORATED SQUARE STEEL TUBE)			EACH
SIGN POST FOOTING (2-1/4" PERFORATED SQUARE STEEL TUBE)			EACH
SIGN POST FOOTING (2-1/2" PERFORATED SQUARE STEEL TUBE)	2		EACH
SIGNING OBJECT MARKER (TYPE 2)			EACH
SIGNING OBJECT MARKER (TYPE 3)			EACH
SIGNING DELINEATOR (TYPE A)(WHITE RIGID, "U" POST)			EACH
SIGNING DELINEATOR (TYPE A)(YELLOW RIGID, "U" POST)			EACH
SIGNING DELINEATOR (TYPE B)(WHITE RIGID, "U" POST)			EACH
SIGNING DELINEATOR (TYPE B)(YELLOW RIGID, "U" POST)			EACH
SIGNING DELINEATOR (TYPE A)(WHITE FLEXIBLE)(TYPE I ANCHOR)			EACH
SIGNING DELINEATOR (TYPE A)(YELLOW FLEXIBLE)(TYPE I ANCHOR)			EACH
SIGNING DELINEATOR (TYPE B)(WHITE FLEXIBLE)(TYPE I ANCHOR)			EACH
SIGNING DELINEATOR (TYPE B)(YELLOW FLEXIBLE)(TYPE I ANCHOR)			EACH
SIGNING DELINEATOR (TYPE A)(WHITE FLEXIBLE)(TYPE 3 ANCHOR)			EACH
SIGNING DELINEATOR (TYPE A)(YELLOW FLEXIBLE)(TYPE 3 ANCHOR)			EACH
SIGNING DELINEATOR (TYPE B)(WHITE FLEXIBLE)(TYPE 3 ANCHOR)			EACH
SIGNING DELINEATOR (TYPE B)(YELLOW FLEXIBLE)(TYPE 3 ANCHOR)			EACH

BID ITEMS	APPROXIMATE QUANTITIES	UNITS
SIGN (REMOVE AND RESET)	LUMP SUM	LUMP SUM

Note:
The contract bid for steel beam posts, stub posts, base plates, and footings will be based on A36 Grade steel quantities. When furnishing the A572 Grade alternate steel, the payment will be based on the equivalent A36 steel unit prices in the contract.

NO.	DATE	REVISIONS	BY	APP'D
2	10/01/19	Removed PSST coupler and changed the tables	D.D.G.	E.W.N.
1	7/23/10	Changed Bid Items as per Spec Book (2007)	D.D.G.	D.B.

KANSAS DEPARTMENT OF TRANSPORTATION

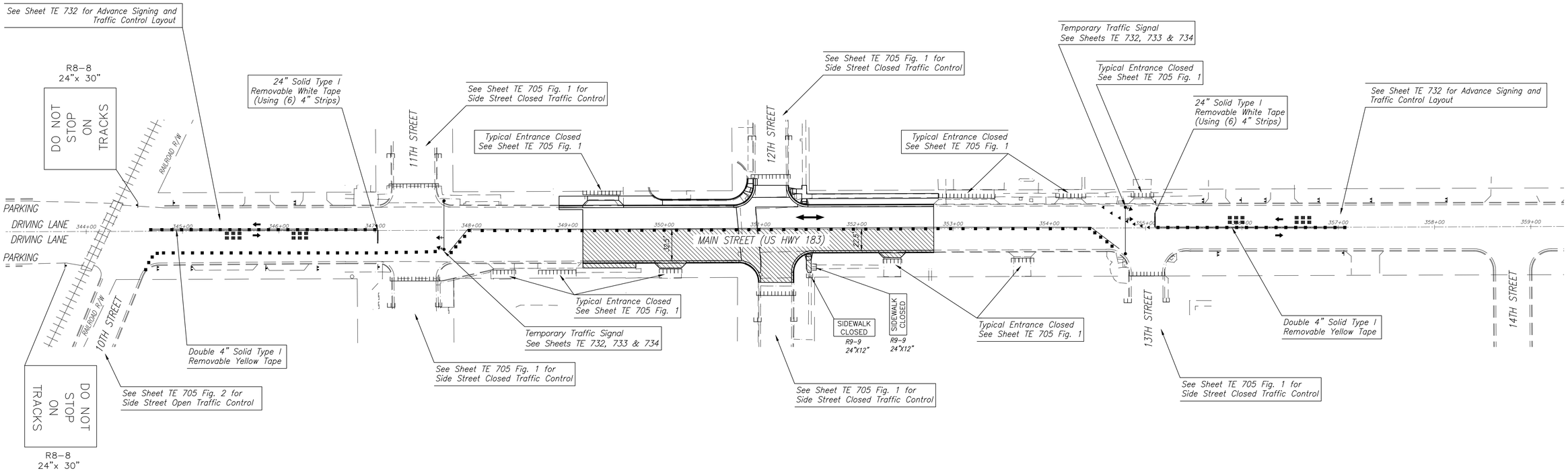
RECAPITULATION OF SIGNING & DELINEATION BID ITEMS

TE450 7/1/03

FHWA APPROVAL			10/01/2019	APP'D	Steven A. Buckley		
DESIGNED	D.D.G.	DETAILED	K.D.S.	QUANTITIES		TRACED	
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.		TRACE CK.	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	34	50

N.T.S.



LEGEND

- *WORK AREA (Typical)*
- *Channelizing Device*
- *Traffic Control Sign*
- *Flagger*
- *Type III Barricades*

NO.	DATE	REVISIONS	BY	APP'D
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

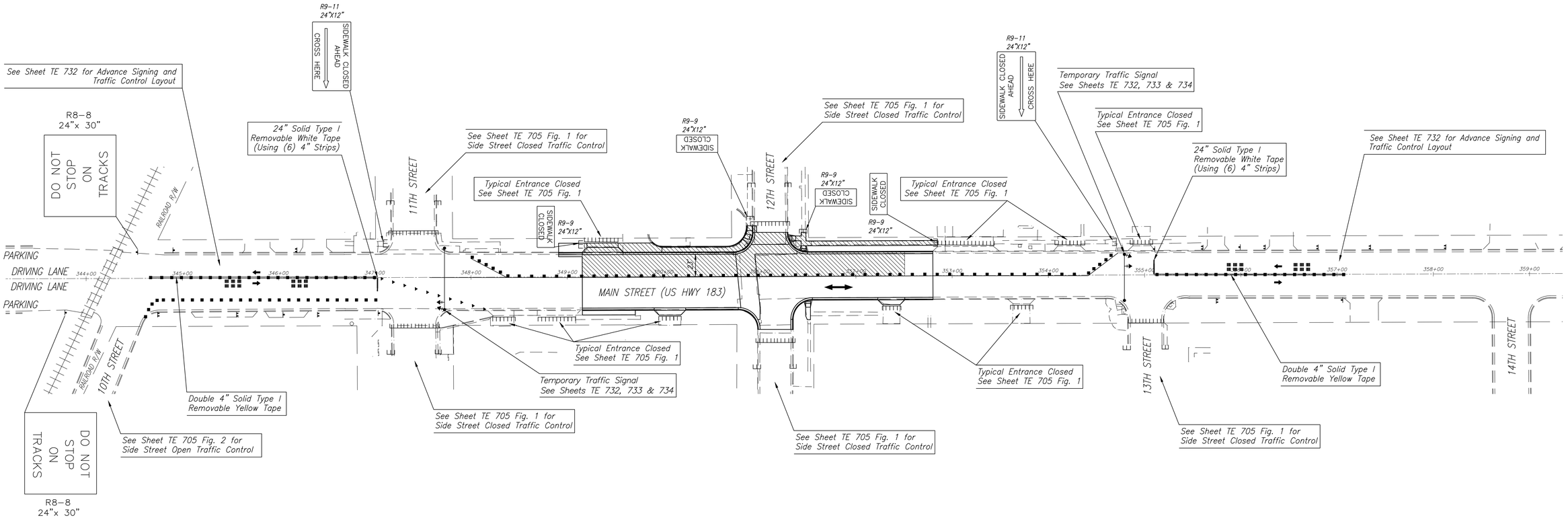
TRAFFIC CONTROL PHASE I

SHEET NO. OF		SCALE	APP'D		
DESIGNED		DETAILED	QUANTITIES	CADD	PGF
DESIGN CK.		DETAIL CK.	QUAN. CK.	CADD CK.	CEH

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	35	50

N.T.S.

CITY APPROVED OF SIDEWALK CLOSURE DURING CONSTRUCTION



LEGEND

- WORK AREA (Typical)
- Channelizing Device
- Traffic Control Sign
- Flagger
- Type III Barricades

NO.	DATE	REVISIONS	BY	APP'D
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PHASE 2

SHEET NO. OF	SCALE	APP'D		
DESIGNED	DETAILED	QUANTITIES	CADD	PGF
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.	CEH

1) Design Speed: Those items delegated to temporary traffic control should be designed and installed using the posted/legal speed of the roadway prior to work starting.

2) Minimum Lane Width: Lane widths shall be a minimum of 11' (measured between centerlines of pavement markings) or as shown on the plans, or as directed by the engineer. A lane width less than 11' may require restricted roadway width signing.

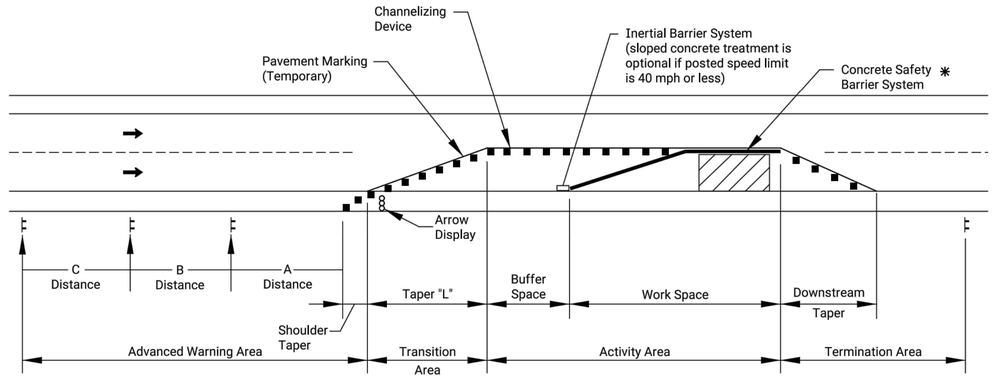
3) Consideration should be made to separate pedestrian and, if needed, bicycle movements from both work site activity and vehicular traffic. Unless a reasonable safe route that does not involve crossing the roadway can be provided, pedestrians should be appropriately directed with advance signing that encourages them to cross to the opposite side of the roadway. In urban and suburban areas with high vehicular traffic volumes, these signs should be placed at intersections (rather than midblock locations) so that pedestrians are not confronted with midblock work sites that will induce them to attempt skirting the work site or making a midblock crossing.

4) When existing pedestrian facilities are disrupted, closed, or relocated, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.

5) When the driving surface open to traffic is milled or is a temporary surface made of loose material, or when directed by the engineer a W8-15 (Grooved Pavement) or W8-7 (Loose Gravel) sign shall be used on mainline approaches. This sign should be placed a "C" distance after the W20-1 (Road Work Ahead) sign. A W8-15p motorcycle plaque shall be used to supplement the W8-15 or W8-7 signs. All signs shall be displayed as long as the condition is present.

6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 785-296-1183.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	36	50



TYPICAL WORK ZONE COMPONENTS

✳When concrete barrier system is used, portable channelizing devices are not needed along the tangent barrier section.

Minimum advance warning sign spacing (in feet):

SPEED (MPH) ✳	*A*	*B*	*C*
URBAN (40 MPH OR LOWER)	*100*	*100*	*100*
URBAN (45 MPH OR HIGHER)	*350*	*350*	*350*
RURAL (55 MPH OR LOWER)	*500*	*500*	*500*
RURAL (60 MPH OR HIGHER)	*750*	*750*	*750*
EXPRESSWAY/FREEWAY	*1000*	*1500*	*2640*

✳ Posted speed prior to work starting

The minimum spacing between signs shall be no less than 100', unless directed by the engineer.

The spacing between any signs may be increased beyond the minimum values in the table above as approved by the engineer in order to maximize visibility.

Taper Formulas:

L = WS for speeds of 45 MPH or more

$L = WS^2/60$ for speeds of 40 MPH or less

Where: L = Minimum length of taper in feet
S = Numericial value of posted speed prior to work starting in MPH
W = Width in offset feet

Shifting Taper=1/2 L
Shoulder Taper=1/3 L

Channelizer Placement:

(1) The spacing between devices in transition area (taper) should not exceed a distance in feet equal to 1/2 the posted speed limit in mph prior to work starting.

(2) The spacing between devices in the advanced warning area and the activity area should not exceed a distance in feet equal to two times the posted speed limit in mph prior to work starting.

(3) Channelizing devices shall be placed for optimum visibility, normally at right angles to the traffic flow.

(4) Place directional indicator barricades in series to direct traffic onto the new path. The arrow sign should not be visible to opposing traffic.

(5) Alternating diagonal orange and white striping must slope downward in the direction traffic is expected to pass.

Buffer Space

SPEED (MPH) ✳	*20*	*25*	*30*	*35*	*40*	*45*	*50*	*55*	*60*	*65*	*70*	*75*
LENGTH (ft)	*115*	*155*	*200*	*250*	*305*	*360*	*425*	*495*	*570*	*645*	*730*	*820*

✳ Posted speed prior to work starting

Neither work activity nor storage of equipment, vehicles, or material should occur in the buffer space. When a protection vehicle is placed in advance of the work space, only the space upstream of the vehicle constitutes the buffer space.

If temporary concrete safety barrier system is used to separate approaching traffic from the work space, the barrier system shall be considered part of the activity area. A full lane width should be available throughout the length of the buffer space. See typical work zone components above.

NO.	DATE	REVISIONS	BY	APP'D
3				
2	03/13/18	W8-15p usage changed to Shall	R.W.B.	E.G.K.
1	08/18/15	Channelizer spacing info	R.W.B.	K.E.

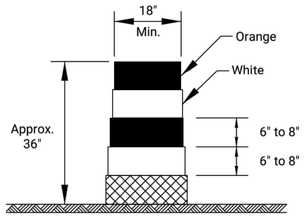
KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
GENERAL NOTES

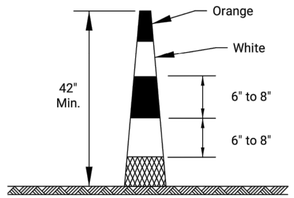
TE700

FHWA APPROVAL		03/13/18	APP'D	Eric Kocher	
DESIGNED	B.A.H.	DETAILED	R.W.B	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

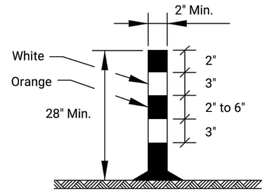
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	37	50



DRUM

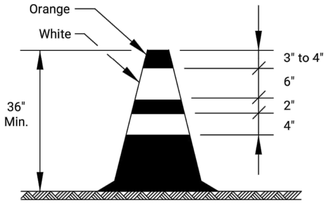


CONICAL DELINEATOR

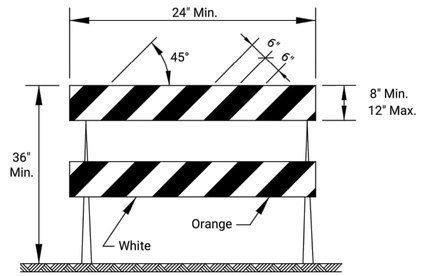


TUBULAR MARKER

Striping as shown for up to 42".

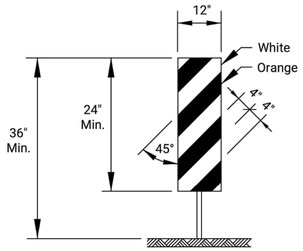


TRAFFIC CONE



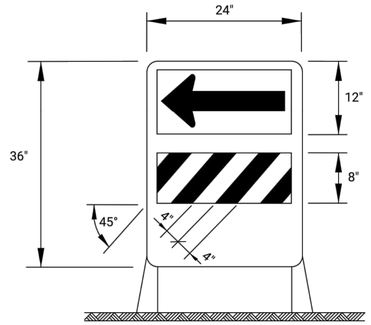
TYPE 2 BARRICADE

For rails less than 36" long, 4" wide stripes may be used. All stripes shall slope downward to the traffic side for channelization.



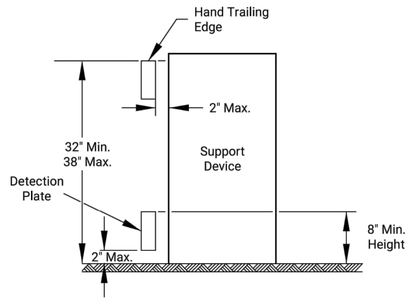
VERTICAL PANEL

The stripes shall slope downward to the traffic side for channelization.



DIRECTION INDICATOR BARRICADE

The stripes shall slope downward in the direction traffic is to pass. The direction indicator barricade shall be used in series to direct the motorist into the intended lane of travel.



PEDESTRIAN CHANNELIZER

1. Support device shall not project beyond the detection plate into the pathway.
2. Hand trailing edges and detection plates are optional for continuous walls.
3. Interconnect pedestrian channelizers to prevent displacement and to provide continuous guidance through or around work.
4. Alternate pathways shall be firm, stable, and slip resistant.
5. Treat height differentials > 1/2" in the surfaces of alternate paths with a firm, stable, and slip resistant temporary ramp having a slope of 12:1 or flatter and having a width equal to the alternate path.
6. Use alternating orange/white on interconnected devices.

Item	Location	Cross-overs	Shoofly Diversions	Tangents	Tapers	Ramps	Head to Head	Object Identifier	Lead-in Devices	Gores
Portable										
	Drums	Yes	Yes	Yes	Yes	Yes	(1)	Yes	Yes	Yes
	Conical Delineators	Yes	Yes	Yes	Yes	Yes	(1)	Yes	Yes	Yes
	Vertical Panels	(2)	(2)	(2)	(2)	(2)	(1,2)	Yes	(2)	(2)
	Direction Indicator Barricade	No	No	No	Yes	No	No	No	No	No
	Type 2 Barricade	(2)	(2)	(2)	(2)	No	No	Yes	No	No
	Traffic Cones	No	No	(4)	(4)	(4)	No	(4)	(4)	(4)
Fixed										
	Tubular Markers	(3)	(3)	(3)	No	(3)	Yes	No	Yes	Yes
	Vertical Panels	(3)	(3)	(3)	(3)	(3)	(3)	Yes	(2,3)	(2)

(1) Not allowed on centerline delineation along freeways or expressways.
(2) The stripes shall slope downward to the traffic side for channelization.
(3) May be used upon the approval of the engineer.
(4) Daytime operations only.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

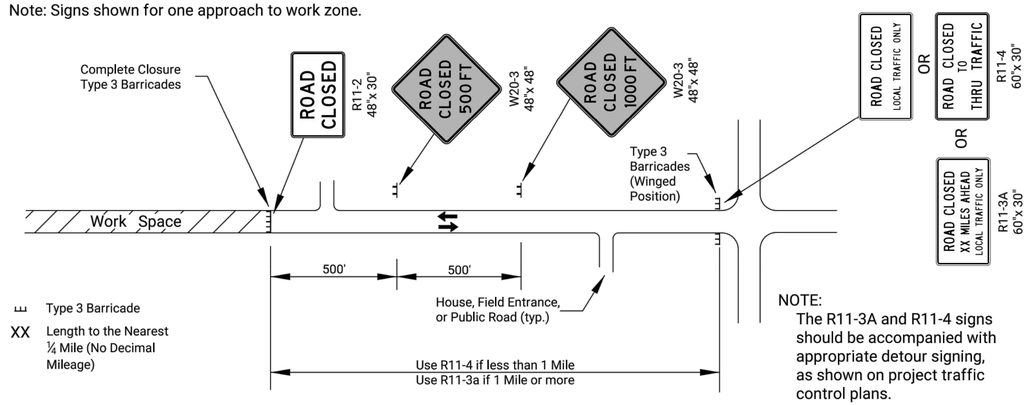
TRAFFIC CONTROL CHANNELIZING DEVICES

TE702

FHWA APPROVAL		06/01/15	APP'D	Kristina Ericksen	
DESIGNED	L.E.R.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	38	50

Note: Signs shown for one approach to work zone.



NOTE:
The R11-3A and R11-4 signs should be accompanied with appropriate detour signing, as shown on project traffic control plans.

FIGURE 1: TYPICAL SIGNING FOR ROAD CLOSURE (MAINLINE OR SIDE ROAD)

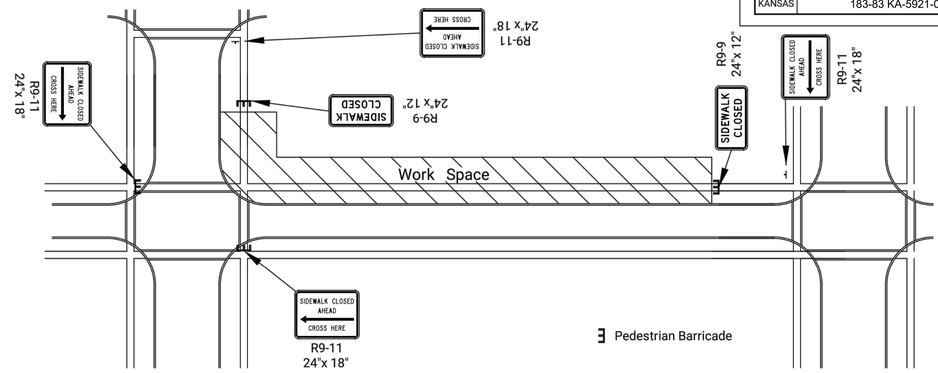


FIGURE 4: TYPICAL SIGNING FOR SIDEWALK CLOSED WITH OPPOSITE SIDEWALK AVAILABLE

Note: Sign shown for one approach to intersection (work zone).

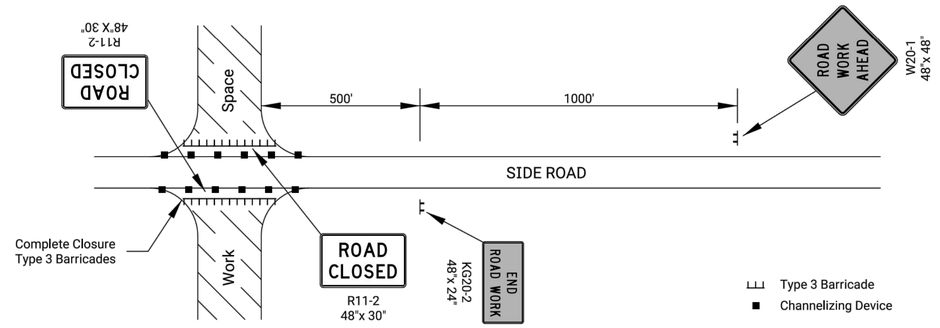


FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

Note: Signs shown for one approach to work zone.

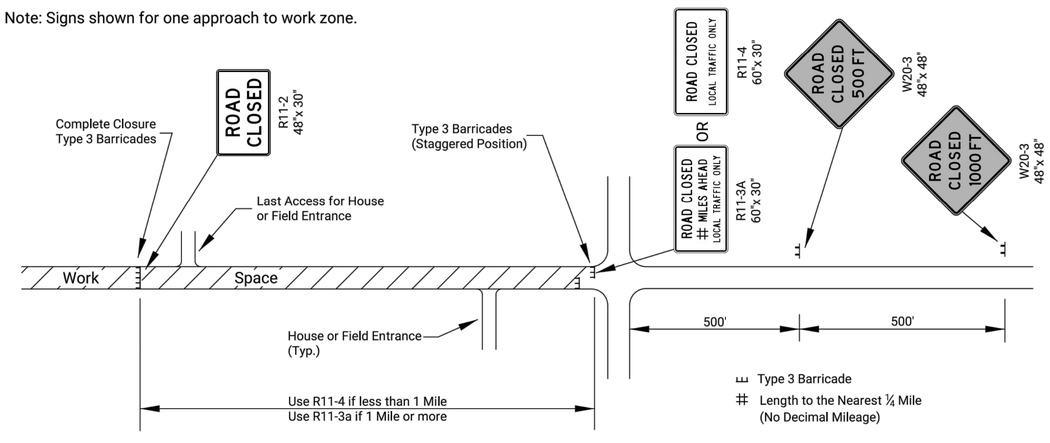
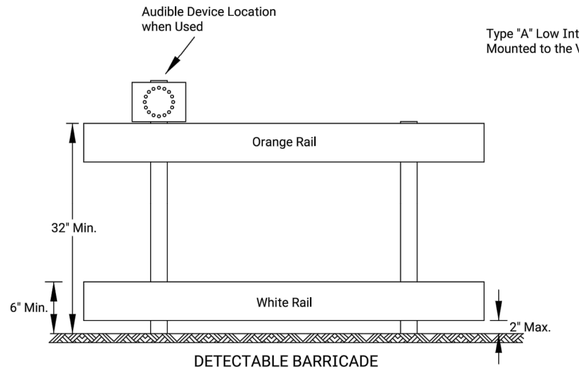
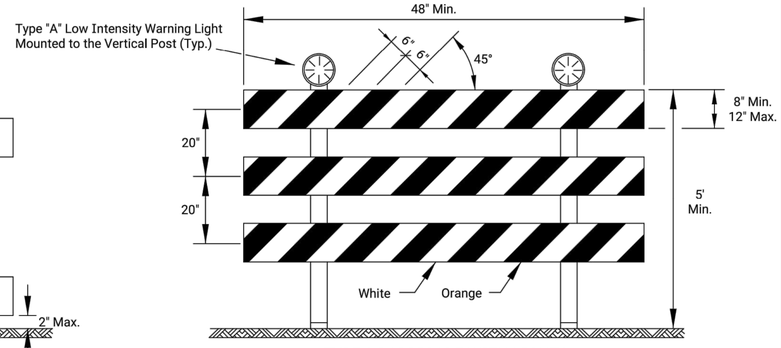


FIGURE 3: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS



DETECTABLE BARRICADE

1. Support device shall not project beyond the detection plate into the pathway.
2. Barricades shall be used to close the entire width of the pathway.
3. Do not use warning lights on pedestrian barricades.
4. Do not use warning lights on audible devices.



TYPE 3 BARRICADE WITH LIGHTS

Approved signs mounted on Type 3 barricades should not cover more than 50% of the top two rails or 33% of the total area of the three rails.

When barricades are placed end-to-end or staggered, a Type "A" low intensity warning light shall be mounted to the vertical post near each outside corner of the end barricades.

ROAD CLOSED GENERAL NOTES

As shown in Figure 1, at the point where thru traffic must detour and local traffic can proceed to the location where the roadway is completely closed, the R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) or R11-4 (ROAD CLOSED LOCAL TRAFFIC ONLY or ROAD CLOSED TO THRU TRAFFIC) sign shall be used with Type 3 barricades (winged position), placed on the shoulders of roadway.

As shown in Figure 3, when local traffic must be allowed access into the work zone, Type 3 barricades shall be longitudinally staggered to maintain the appearance of a closed roadway. A second line of end-to-end Type 3 barricades shall be placed just beyond the last access point in the work zone, to completely close the roadway.

The R11-4 (ROAD CLOSED TO THRU TRAFFIC or ROAD CLOSED LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is less than 1 mile.

The R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is 1 mile or greater.

The words "BRIDGE OUT" (or BRIDGE CLOSED) may be substituted for the words "ROAD CLOSED" on the R11-3a or R11-4 sign where applicable.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL CLOSURES

TE704

FHWA APPROVAL		06/01/15	APP'D	Kristina Ericksen	
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	39	50

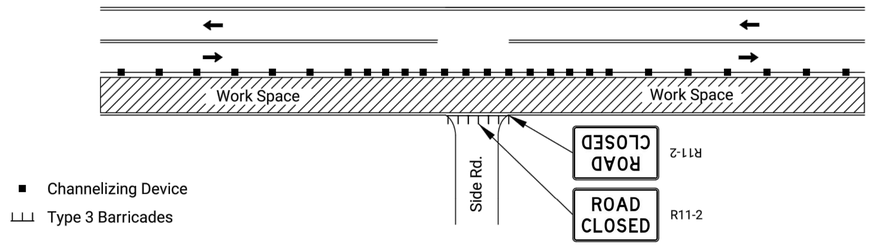


FIGURE 1: SIDE ROAD OR ENTRANCE CLOSED THROUGH WORK AREA

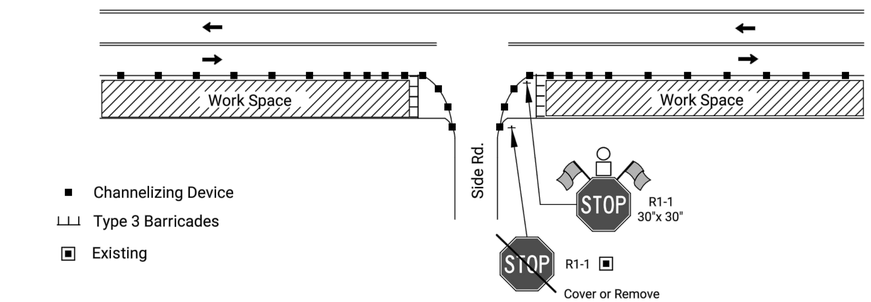


FIGURE 2: SIDE ROAD OR ENTRANCE OPEN THROUGH WORK AREA

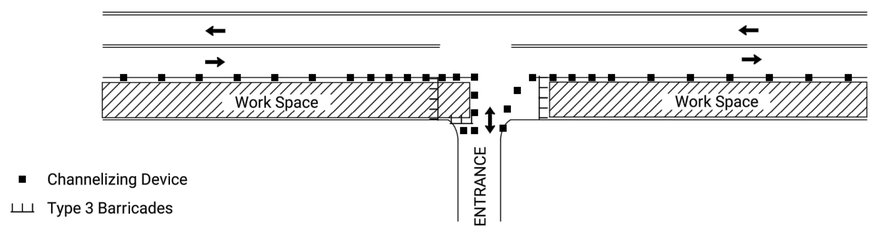


FIGURE 3: LOW VOLUME ENTRANCE CONTRUCTED HALF AT A TIME

Note: Consider large vehicles making right turns into and out of entrance
and use figure 4 as needed

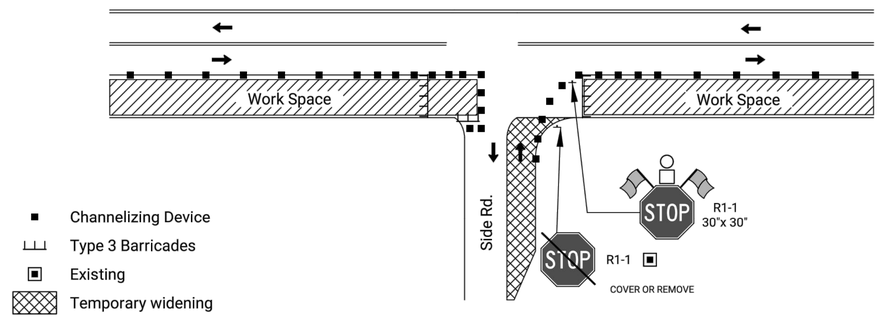


FIGURE 4: SIDE ROAD OR ENTRANCE CONSTRUCTED HALF AT A TIME:
TWO WAY TRAFFIC REQUIRED

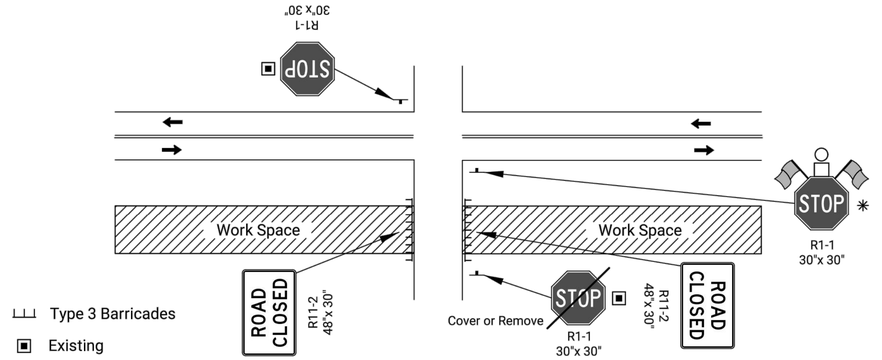


FIGURE 5: SIDE ROAD OPEN THROUGH WORK AREA ON DIVIDED ROADWAY

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
ACCESS THROUGH THE WORK AREA

TE705

FHWA APPROVAL		06/01/15	APP'D Kristina Ericksen		
DESIGNED	R.W.B.	DETAILED R.W.B.	QUANTITIES	TRACED	
DESIGN CK.		DETAIL CK.	QUAN. CK.	TRACE CK.	

SIGN LAYOUT INFORMATION

KG20-2

Std. Size Expwy/Freeway
6" C
48"x 24"

KG20-5

Std. Size Expwy/Freeway
6" C
48"x 24"

KM4-20

Std. Size
3" C
24"x 6"

Expwy/Freeway
6" C
48"x 12"

W7-3a

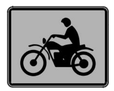
Mileage to be Determined by the Engineer.

W8-15

Std. Size Expwy/Freeway
8" D
48"x 48"

W8-7

Std. Size Expwy/Freeway
8" D
48"x 48"



W8-15p

Std. Size Expwy/Freeway
30"x 24"

W8-17

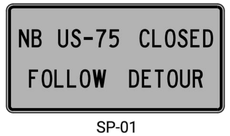
Std. Size Expwy/Freeway
48"x 48"

W8-11

Std. Size Expwy/Freeway
8" D
48"x 48"

W8-17P
(Optional)

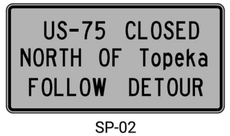
Std. Size Expwy/Freeway
30"x 24"



SP-01
(Special Sign)

Std. Size
6" C

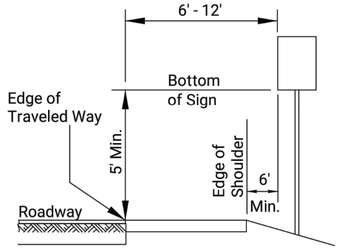
Expwy/Freeway
10" D



SP-02
(Special Sign)

Std. Size		Expwy/Freeway	
Uppercase:	6" C	Uppercase:	10" D
Lowercase:	4.5" C	Lowercase:	8" D

All city names and street names on special signs and destination signs must have upper and lower case letters.

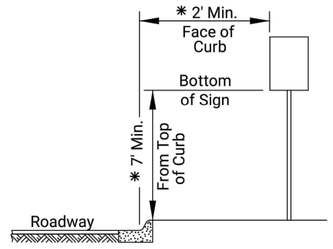


RURAL

1) Ground-mounted signs shall be mounted at a minimum height of 5' measured from the bottom of sign to the near edge of the pavement.

2) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

3) The height of the secondary sign mounted below another sign may be 4' measured from the bottom of the sign to the near edge of the pavement. Signs shall not overlap each other.



URBAN

1) Signs shall be mounted at a minimum height of 7' measured from the bottom of sign to the near edge of the pavement.

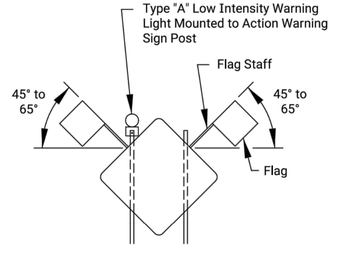
2) Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicycle traffic.

3) Signs mounted lower than 7' should not project more than 4" into pedestrian facilities.

4) The height from of the secondary sign mounted below another sign may be 6' measured from the bottom of sign to the near edge of the pavement. Signs shall not overlap each other.

5) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

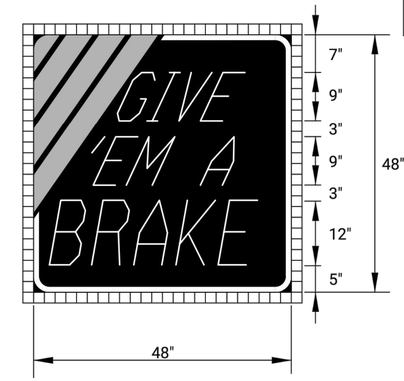
* 6) Pedestrian detour signing shall be a minimum of 2' measured from the top of the pedestrian pathway to the bottom of the sign and shall not protrude into the walkway nor shall it project beyond the back of curb.



When the sign width is equal to or greater than 9', three or more wood posts may be used with a minimum of 4' between the centerline of each post. All signs less than 9' in width shall use a maximum of two wood posts.

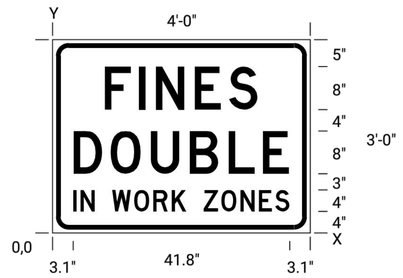
In the case of hitting rock when driving posts
1. Shift the sign location. Do not violate minimum sign spacing.
2. With the engineer's approval, use acceptable alternative sign stands.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	40	50



KI-104a

Sign Number	GIVE EM A BRAKE	
Width x Height	4'-0" x 4'-0"	
Border Width	1.0"	
Corner Radius	4.0"	
Stripe Width	3.0"	
Mounting	Ground	
Background	Type:	Non-Reflective
	Color:	Black
Legend/Border	Type:	Reflective
	Color:	White
Legend Font	Dutch 801 Roman SWC 25 Degree Slant	
Stripes	Type:	Reflective
	Color:	Orange



KI-105a

Sign Number	FINES DOUBLE	
Width x Height	4'-0" x 3'-0"	
Border Width	0.9"	
Corner Radius	3.0"	
Mounting	Ground	
Background	Type:	Reflective
	Color:	White
Legend/Border	Type:	Non-Reflective
	Color:	Black

Dimensions in inches — Spacings are to start of next letter

Y FONT	LETTER SPACINGS															HT LEN
23.0 D		F	I	N	E	S										8.0
	9.7	6.4	3.2	7.3	6.4	5.4	9.7									28.6
11.0 D		D	O	U	B	L	E									8.0
	3.9	6.9	7.5	7.3	7.3	6.4	4.9	3.9								40.3
4.0 D		I	N		W	O	R	K		Z	O	N	E	S		4.0
	3.1	1.6	2.7	3.2	4.3	3.8	3.6	2.8	3.2	3.4	3.8	3.6	3.2	2.7	3.1	41.8

Notes:

Typically, there are two sets of informational signs installed per project: one for each direction of traffic.

Install signs a minimum of 500' in advance of the road work ahead sign. The engineer may designate a more appropriate location if conditions dictate.

The informational signs are not to interfere with the traffic control signs for the project.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

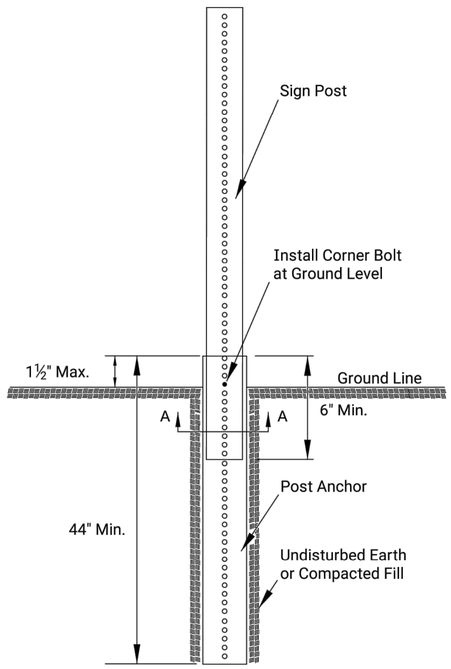
TRAFFIC CONTROL
SIGN INFORMATION

TE710

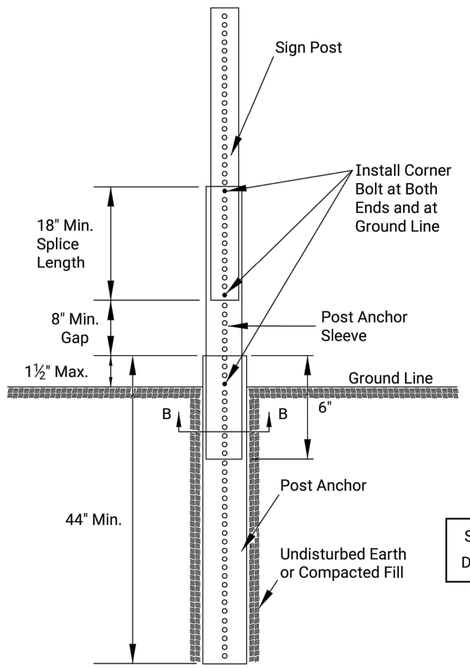
FHWA APPROVAL		06/01/15	APP'D	Kristina Pyle	
DESIGNED	R.W.B.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	41	50

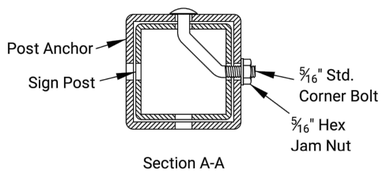
PERFORATED SQUARE STEEL TUBE (P.S.S.T.) POST SETUP



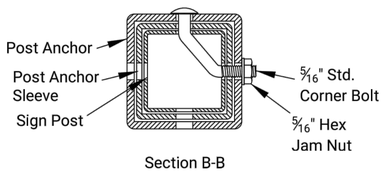
P.S.S.T. Detail



Telescoping P.S.S.T. Detail



Section A-A

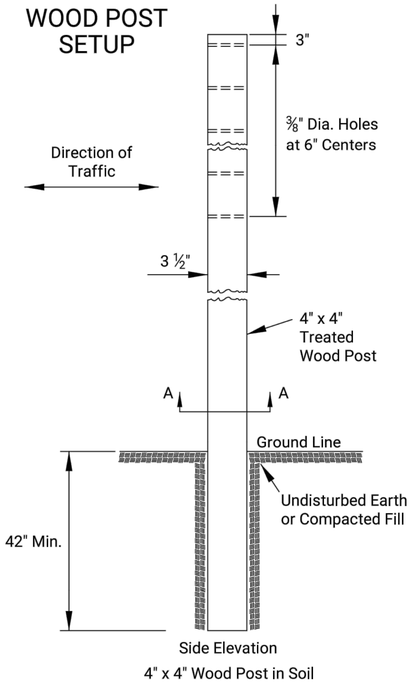


Section B-B

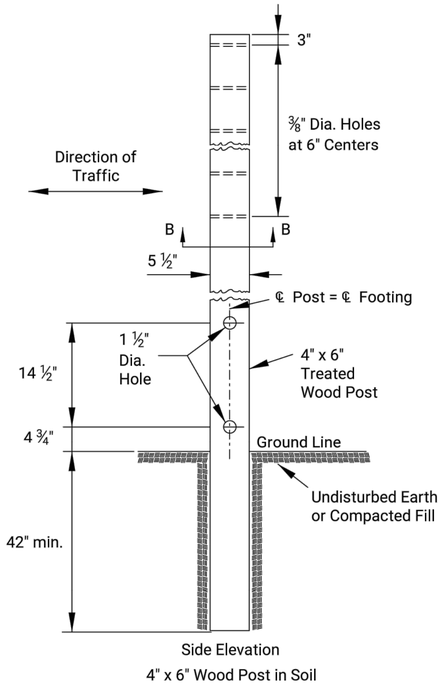
Details for 2", 2 ¼", or 2 ½" sign posts

Place bolts in the same corner along each sign post.

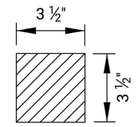
WOOD POST SETUP



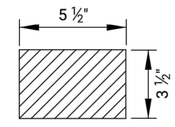
Side Elevation
4" x 4" Wood Post in Soil



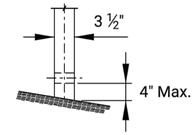
Side Elevation
4" x 6" Wood Post in Soil



Section A-A



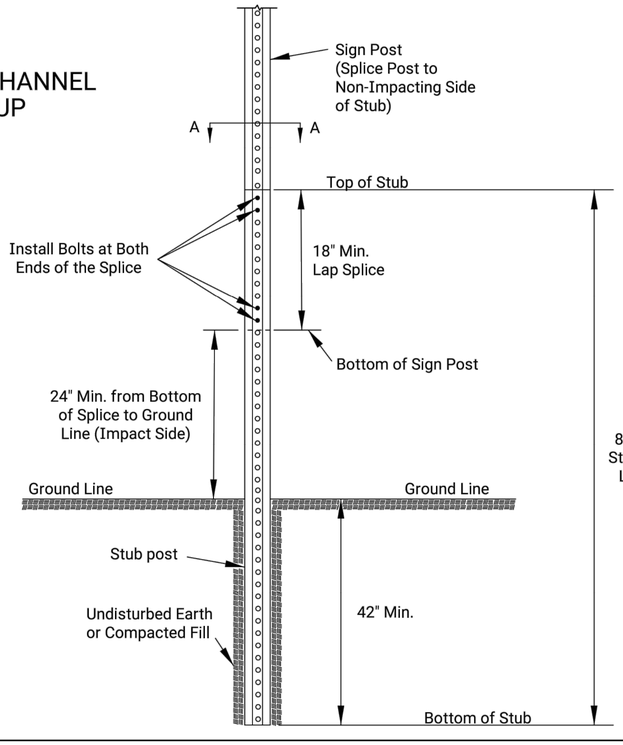
Section B-B



Front Elevation

See TE710 for Additional Details and Requirements

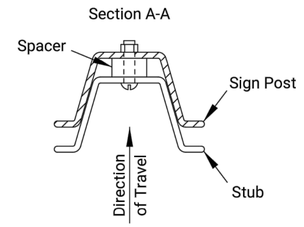
3 LB/F U-CHANNEL SETUP



Notes:

Place two bolts at both ends of the splice through the holes nearest the ends of the splice.

Use manufacturer recommended spacers over the bolts between the spliced pieces of U-Channel.



NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

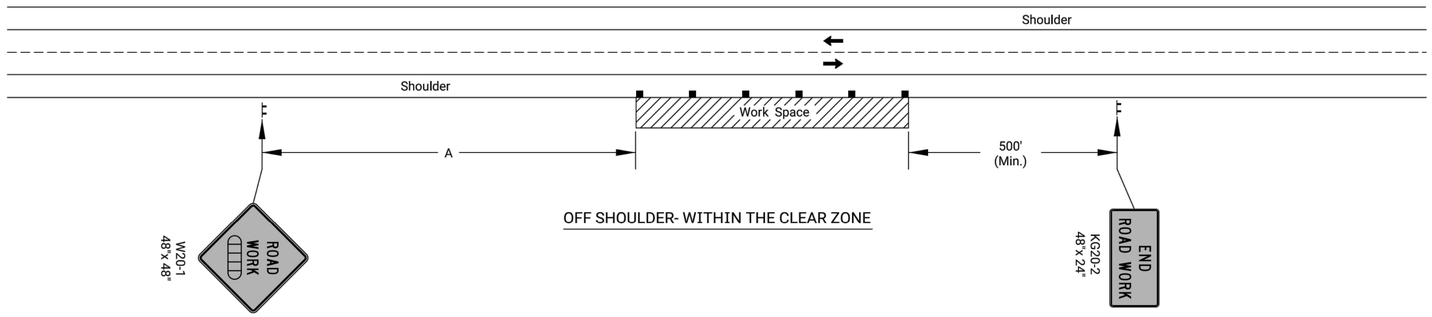
KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SIGN POSTS

TE712

FHWA APPROVAL			06/01/15	APP'D	Kristina Pyle		
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES		TRACED	
DESIGN CK.		DETAIL CK.		QUAN. CK.		TRACE CK.	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	42	50

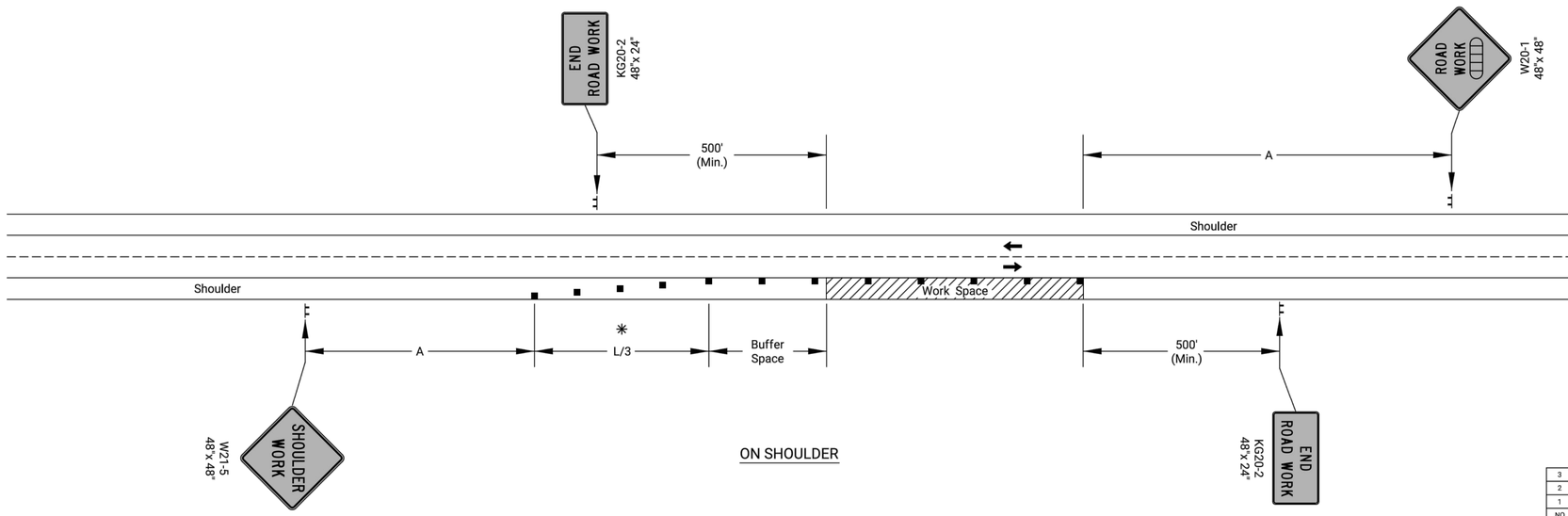


OFF SHOULDER- WITHIN THE CLEAR ZONE

Notes:

No traffic control is required if the Work Space is located outside of the clear zone.

For operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with high-intensity rotating, flashing, oscillating, or strobe lights is used.



ON SHOULDER

✳ Omit taper if paved shoulder is less than 8' wide.

■ Channelizing Device

Ahead, 1500 ft, or 1 Mile

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

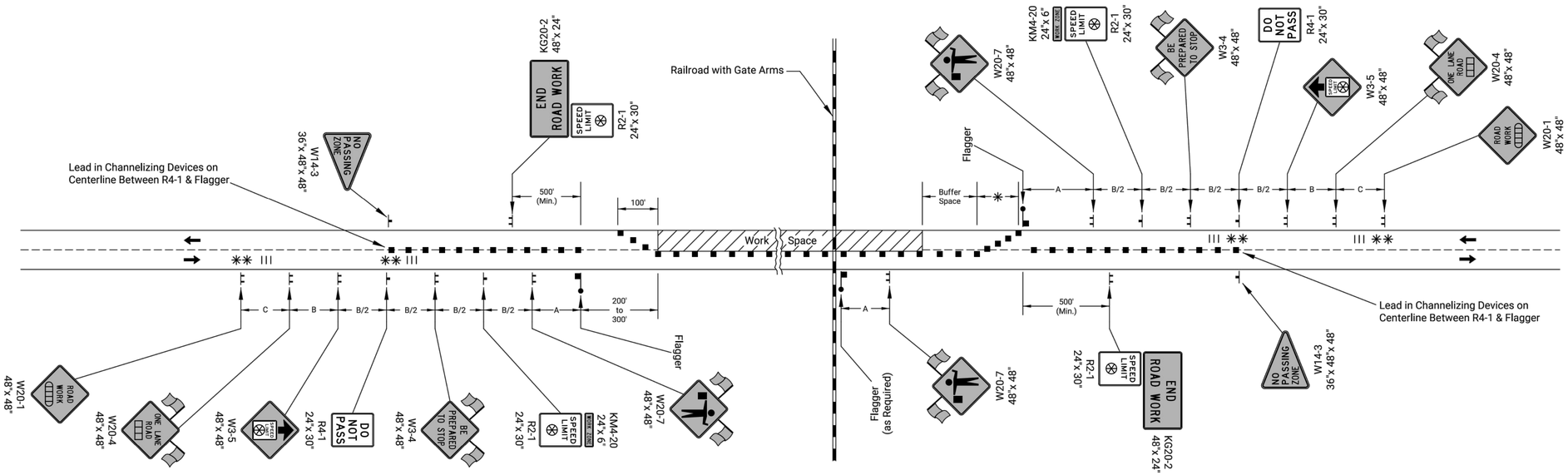
TRAFFIC CONTROL
SHOULDER WORK
UNDIVIDED ROADWAY

TE720

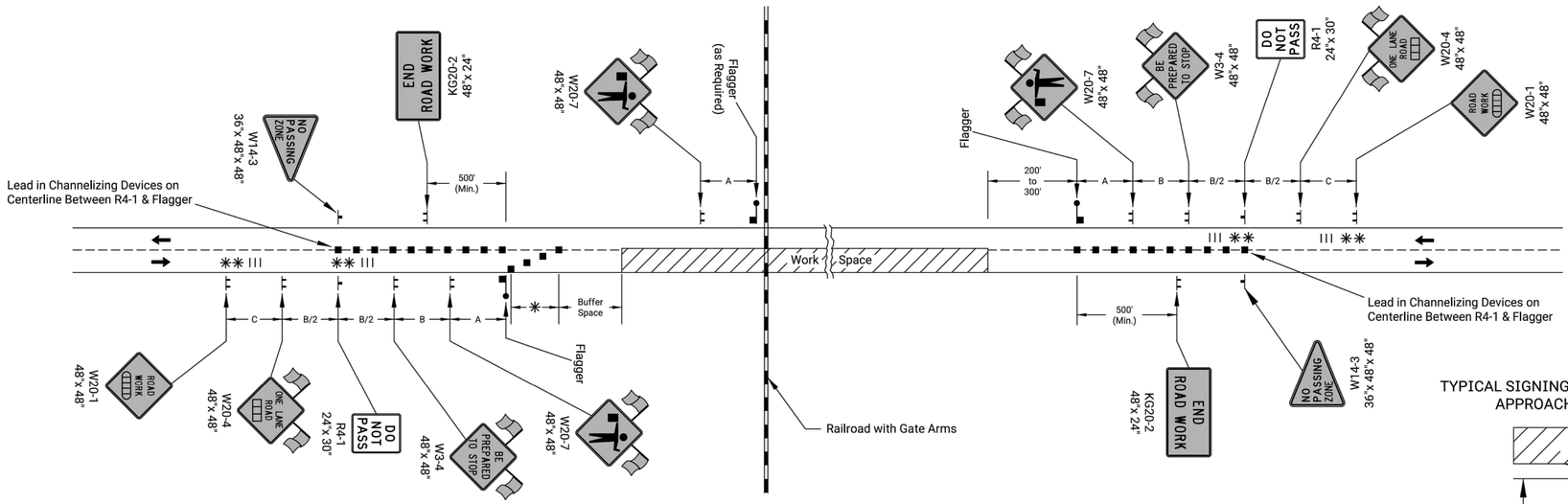
FHWA APPROVAL		06/01/15	APP'D	Kristina Ericksen	
DESIGNED	L.E.R.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	43	50

FLAGGER

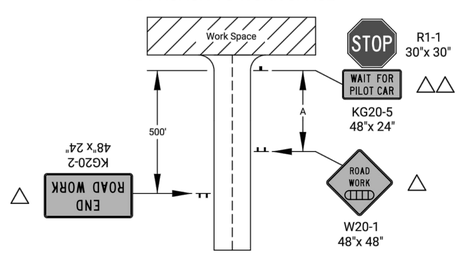


FLAGGER AND PILOT CAR



- ■ Channelizing Device
- Ahead, 1500 ft, or 1 Mile
- Ahead, 1000 ft, 1500 ft, or ½ Mile
- Speed to be Determined by the Engineer
- ○ Type "A" Low Intensity Warning Light
- III Temporary Portable Rumble Strips

TYPICAL SIGNING FOR A MINOR SIDE ROAD APPROACH TO WORK SPACE



USE TE731 FOR FLAGGER OR PILOT CAR ON ROADWAYS WITH CONCRETE SHOULDERS GREATER THAN 8 FT.

Notes:

Trucks hauling material to the project should STOP at the Flagger. After stopping, upon approval of the Engineer, trucks may be allowed to move around the Flagger.

Place a Flagger at all highway and major collector intersections and at-grade railroad intersections with lights and gates in the work space to control traffic crossing the tracks to the left of the gate arm. The need for a Flagger at minor side road intersections shall be determined by the Engineer. Place a W20-7 (Flagger symbol) sign on each side road that is controlled by a Flagger.

Existing signs shall not be covered or removed between Flagger stations.

Temporary rumble strips may be used in lieu of lead in channelizing devices when the roadway is less than or equal to 30' including paved shoulders. When extenuating circumstances exist, the Area Engineer may elect to eliminate both the lead in channelizers and the rumble strips.

✳ Minimum six (6) channelizers spaced at 20' intervals.

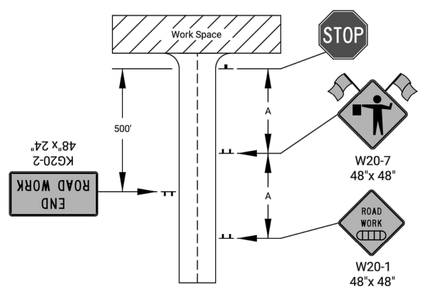
✳✳ Optional rumble strips may be placed: One set between the W20-1 and W20-4, and one set between the R4-1 and W3-4, on each approach.

△ Not required on substantial maintenance projects (1R).

△△ The KG20-5 (WAIT FOR PILOT CAR) sign shall be mounted on an approved portable support and not attached to the existing stop sign post.

The KG20-5 sign shall be placed immediately in front of the existing stop sign, a minimum of 6" below the bottom of the stop sign. The sign should be removed or covered when there is no pilot car.

TYPICAL SIGNING FOR HIGHWAY OR MAJOR COLLECTOR APPROACH TO WORK SPACE



NO.	DATE	REVISIONS	BY	APP'D
3				
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1				

KANSAS DEPARTMENT OF TRANSPORTATION

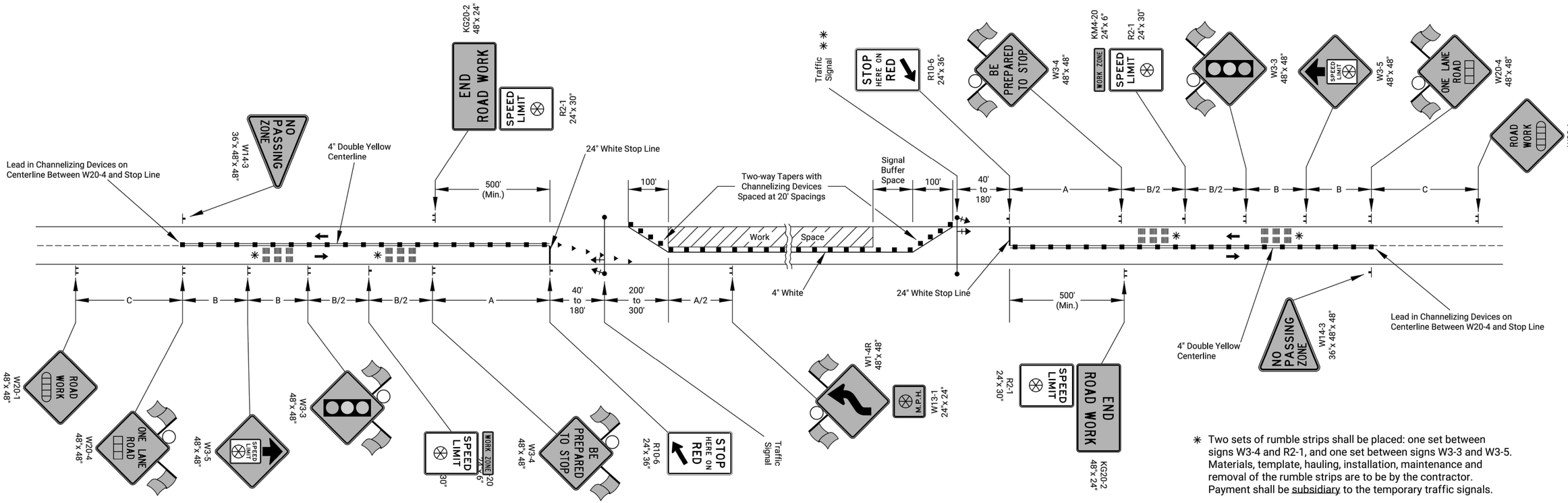
TRAFFIC CONTROL
FLAGGER OR PILOT CAR

TE730

FHWA APPROVAL		06/01/15	APP'D	Kristina Ericksen	
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	44	50

NOTE: Refer to TE733 and TE734 for additional temporary traffic signal details.



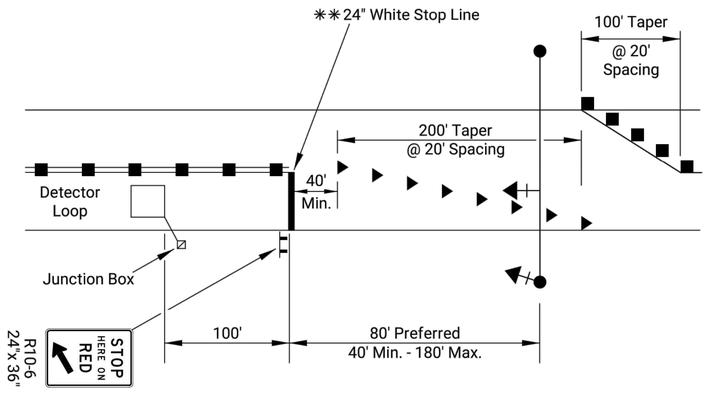
✳ Two sets of rumble strips shall be placed: one set between signs W3-4 and R2-1, and one set between signs W3-3 and W3-5. Materials, template, hauling, installation, maintenance and removal of the rumble strips are to be by the contractor. Payment shall be subsidiary to the temporary traffic signals.

SIGNAL BUFFER SPACE

SPEED (MPH) ⚠	20	25	30	35	40	45	50	55	60	65	70
LENGTH (FT)	35	50	65	85	100	115	130	150	165	165	165

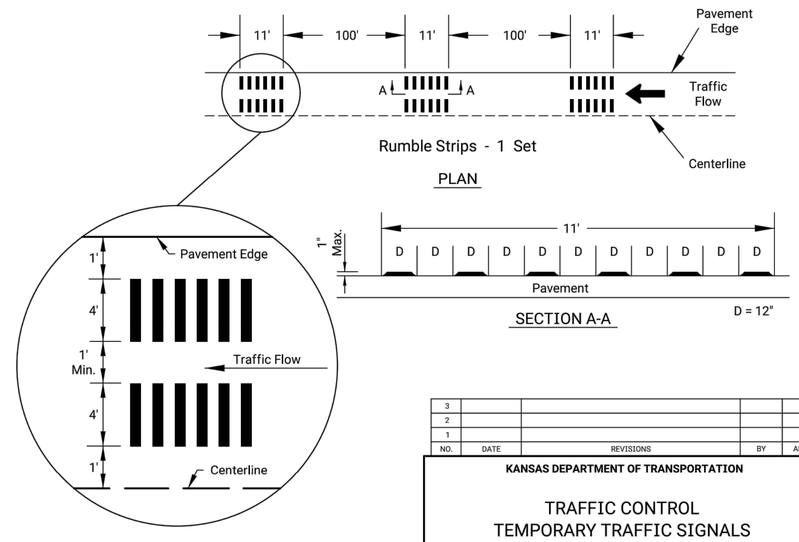
Neither work activity nor storage of equipment, vehicles, or material should occur in the buffer space. When a protection vehicle is placed in advance of the work space, only the space upstream of the vehicle constitutes the buffer space.

⚠ Posted speed prior to work starting



✳✳ Stop Line Created Using (6) 4" Strips of Temporary Tape

TYPICAL ASPHALT RUMBLE STRIP DETAILS



- ▸ Uni-Directional Yellow Temporary Raised Pavement Marker (Type 1) (Facing Right)
- ■ Channelizing Device
- Ahead, 1500 ft, or 1 Mile
- Ahead, 1000 ft, 1500 ft, or ½ Mile
- Speed to be determined by the Engineer
- Signal Head with Back Plate
- Temporary Signal Pole or Trailer
- ○ Type "A" Low Intensity Warning Light

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

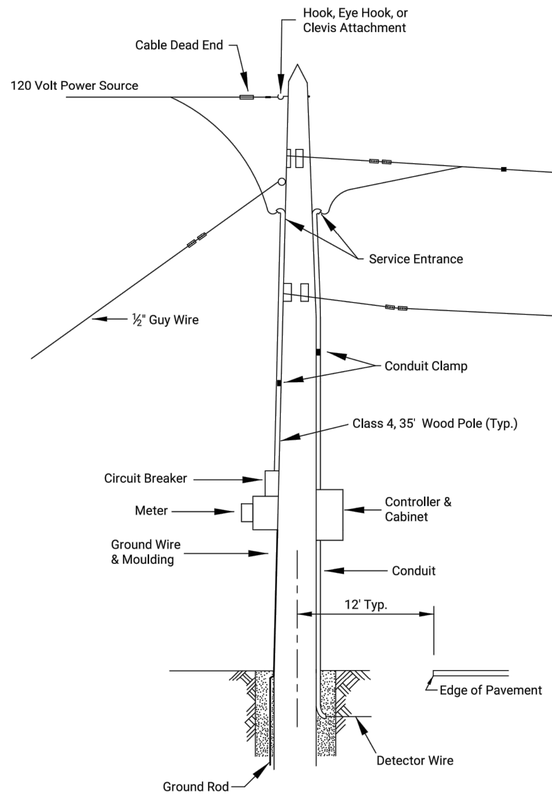
KANSAS DEPARTMENT OF TRANSPORTATION

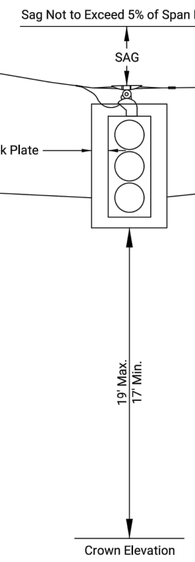
TRAFFIC CONTROL
TEMPORARY TRAFFIC SIGNALS

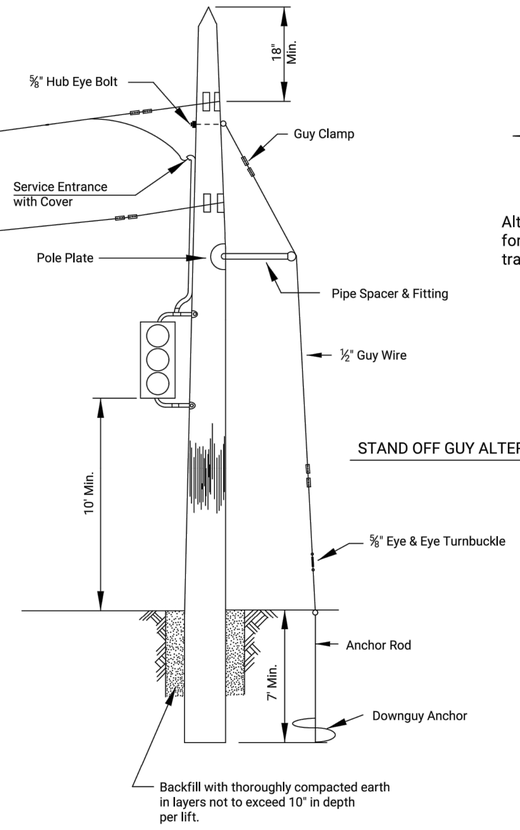
TE732

FHWA APPROVAL			06/01/15	APP'D	Kristina Ericksen
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

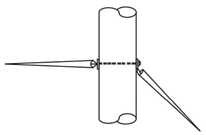
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	45	50



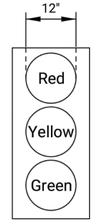




STAND OFF GUY ALTERNATE



Alternate method of mounting for spanwire & downguy traffic signal support pole.



SIGNAL INDICATIONS

GENERAL NOTES

The engineer in charge of construction will need to approve all locations for traffic signals to be installed. Final positions & aiming of signal faces to be determined in the field.

Trailer mounted portable traffic signals may be substituted for span wire signals.

The traffic signal system shall conform to and be operated according to the requirements of the M.U.T.C.D.

Contact local utility companies to advise them of installation and coordinate power hook-up if needed.

All wiring installed shall conform to the national electrical code and local ordinances & requirements.

The power supply and the operation & maintenance of the signal system shall be the responsibility of the contractor.

Note:
See TE734 for additional information.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
TEMPORARY TRAFFIC SIGNAL DETAILS

TE733

FHWA APPROVAL		06/01/15	APP'D	Kristina Ericksen	
DESIGNED	L.E.R.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	46	50

The control equipment shall be designed in such a manner that the normal dwell condition shall be an all red" signal display. Upon receipt of a detector actuation from one approach, the signals facing that approach shall cycle to a green indication for a minimum period (minimum green). Subsequent detector actuations from the same direction shall result in additional green time being allocated to that movement (unit extension). In the event that an actuation exists for the direction of travel not having the right of way, a maximum green time setting shall provide a preset time limit for the direction having the right of way.

The control equipment shall provide for different clearance sequences, one for each required phase.

If the green indication has been displayed to one approach to the zone, no vehicle actuation exists on the opposite approach and another actuation occurs during the yellow display to the approach just serviced, the display shall proceed to an all red display for a period of time (red revert) to prevent the display of green - yellow - green indications to the motorist.

If the right of way is to be transferred to another approach, an all red indication shall be provided so that opposing traffic does not meet within the one way zone.

Response to a vehicle actuation from another approach shall be immediate if all timings have expired. In the event that all time settings have not expired at the point at which a vehicle actuation occurs, the system shall continue to provide the appropriate clearance interval timings before acting upon an actuation input.

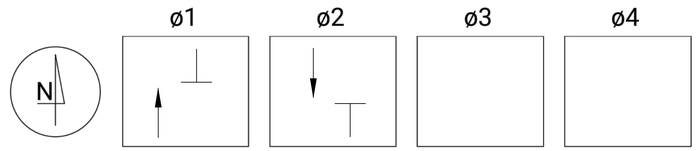
Vehicle actuations received from the detector at approaches other than that which last received a green indication shall have preference over additional actuations received from the end which last had the right of way in the event that any clearance interval timings have not expired when the actuation(s) occurs. If all timings have expired, response shall be on a first come, first served basis.

All time settings shall be user adjustable and shall be accomplished from the equipment front panel by way of a keyboard and menu screen format. All applicable portions of the
KDOT standard specifications for vehicle actuation shall apply except that a standard NEMA conflict monitor shall be acceptable.

Signals shall be capable of actuation. On asphalt roadways, detection loops may be sawed into the road. Commercially made loop mats may also be used. Do not cut loops into concrete pavement. Other types of detection may be used if approved prior to installation by the Engineer. Do not use microwave detection systems in urban areas. Detector shall be set to operate in the locking mode.

If used, detection loops shall be 6' by 6' and have three turns of wire (see detail). Center loops in the lane of traffic and locate 100' behind the stop line. Cut slots in pavement for loops $\frac{5}{16}$" wide with 1"
minimum depth. Fill slots with asphalt or an approved elastic epoxy sealant (concrete pavement) to within $\frac{1}{8}$" of pavement surface. Other than a "western union" type splice or approved connector at their junction, feeder cable and loop wire shall be of continuous run with no splices. The loop and the feeder cable connection shall be twisted 2 turns per foot.

SIGNAL PHASING AND TIMING

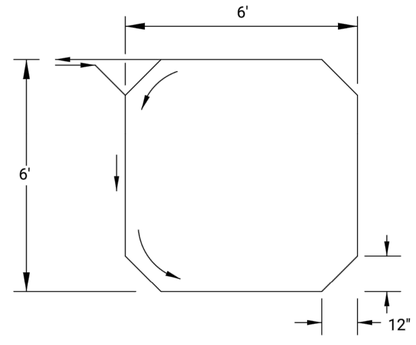


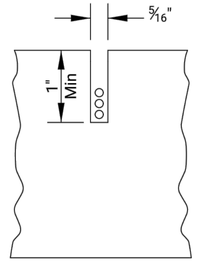
Phase	Minimum Green	Maximum Green	Yellow	All Red
1	15	30	5	40
2	15	30	5	40

Phase		Stationing
1	Stopline	347+10
1	Signal	347+70
2	Signal	354+80
2	Stopline	355+40

All times in seconds.
Normal dwell shall be "all red".
Unit extension shall be 3.0 seconds.
Red revert shall be 5.0 seconds.

LOOP DETECTOR DETAIL





Note: See TE733 for additional information.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
TEMPORARY TRAFFIC SIGNAL DETAILS

TE734

FHWA APPROVAL		06/01/15	APP'D	Kristina Ericksen	
DESIGNED	L.E.R.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	47	50

SUMMARY OF TRAFFIC CONTROL DEVICES (EACH)

Work Zone Sign (Special)		
Sign No.	16.25 Sq.Ft. & Less	16.26 Sq.Ft. & Over

SUMMARY OF TRAFFIC CONTROL DEVICES (EACH PER DAY)

✳ Quantity most used on the project at any one time

	Work Zone Signs ✳			
	Sign No.	Size - Sq.Ft. 0-9.25	9.26-16.25	16.26 & Over
Flagger	W2O-7a		2	
End Road Work	KG20-2	2		
Give Em A Brake	KI 104a		2	
Fines Double	KI 105a		2	
Work Zone	KM4-20	2		
Speed Limit	R2-1	4		
Do Not Stop on Tracks	R8-8	2		
Sidewalk Closed	R9-9	4		
Sidewalk Closed Ahead	R9-11	2		
Stop Here on Red	R10-6	2		
Road Closed	R11-2		28	
Road Closed Thru Traffic	R11-4		5	
Curve Ahead	W1-4R		1	
Signal	W3-3		2	
Be Prepared to Stop	W3-4		2	
Speed Limit Ahead	W3-5		2	
Advisory Speed	W13-1	1		
No Passing Zone	W14-3	2		
Road Work Ahead	W2O-1		2	
One Lane Ahead	W20-4		2	
Shoulder Work	W21-5		1	
		21	51	

Barricades ✳	
Type 3 (4' to 12')	Pedestrian
68	4

Channelizing Devices ✳		
Fixed	Portable	Pedestrian
	140	

Lighted Devices ✳	
Work Zone Warning Light (Type "A" Low Intensity)	63
Work Zone Warning Light (Red Type "B" High Intensity)	
Arrow Display	
Portable Changeable Message Sign	

Recapitulation of Quantities		
Item	Quantity	Unit
Work Zone Signs (0 to 9.25 Sq.Ft.)	2210	Each Per Day
Work Zone Signs (9.26 to 16.25 Sq.Ft.)	5360	Each Per Day
Work Zone Signs (16.26 Sq.Ft. & Over)		Each Per Day
Work Zone Barricades (Type 3 - 4' to 12')	7140	Each Per Day
Work Zone Barricades (Pedestrian)	420	Each Per Day
Channelizer (Fixed)		Each Per Day
Channelizer (Portable)	14700	Each Per Day
Channelizer (Pedestrian)		Each Per Day
Work Zone Warning Light (Type "A" Low Intensity)	6620	Each Per Day
Work Zone Warning Light (Red Type "B" High Intensity)		Each Per Day
Arrow Display		Each Per Day
Portable Changeable Message Sign		Each Per Day
Pavement Marking (Temporary)		
4" Solid (Type I)	33	Sta./Line
4" Solid (Type II)		Sta./Line
4" Broken (8.0') (Type I)		Sta./Line
4" Broken (8.0') (Type II)		Sta./Line
4" Broken (3.0') (Type I)		Sta./Line
4" Broken (3.0') (Type II)		Sta./Line
4" Dotted Extension (Type I)		Sta./Line
4" Dotted Extension (Type II)		Sta./Line
Solid (Line Masking Tape)		Sta./Line
Broken (Line Masking Tape)		Sta./Line
Symbol (Type I)		Each
Symbol (Type II)		Each
Flexible Raised Pavement Marker (4" Broken (8.0'))		Sta./Line
Flexible Raised Pavement Marker (4" Broken (3.0'))		Sta./Line
Pavement Marking Removal		Lin. Ft.
Work Zone Sign (Special) (16.25 Sq. Ft. & Less)		Each
Work Zone Sign (Special) (16.26 Sq. Ft. & More)		Each
Rigid Raised Pavement Marker (Type I)		Each
Rigid Raised Pavement Marker (Type II)		Each
Traffic Signal Installation (Temporary)	Lump Sum	Lump Sum
Traffic Control (Initial Set Up)	Lump Sum	Lump Sum
Traffic Control		Lump Sum
Flagger (Set Price)	1	Hour

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
SUMMARY OF DEVICES
RECAPITULATION OF QUANTITIES

TE795

FHWA APPROVAL 06/01/15		APP'D Kristina Ericksen	
DESIGNED B.A.H.	DETAILED R.W.B.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	48	50

STA =350+25.00
Cut = 98 Fill = 0

STA =350+00.00
Cut = 97 Fill = 0

STA =349+75.00
Cut = 96 Fill = 0

STA =349+50.00
Cut = 95 Fill = 0

TRANSITION CROSS SLOPE FROM STATION 349+25 TO 349+50

MATCH EXISTING CROSS SLOPE

STA =349+25.00
Cut = 87 Fill = 0

MATCH EXISTING CROSS SLOPE

STA =349+15.00
Cut = 83 Fill = 0

SCALE 1" = 5'
STA. 349+15 TO 350+25

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	49	50

STA =351+75.00
Cut = 79 Fill = 0

STA =351+50.00
Cut = 85 Fill = 0

STA =351+25.00
Cut = 149 Fill = 0

STA =351+00.00
Cut = 135 Fill = 0

STA =350+75.00
Cut = 88 Fill = 0

STA =350+50.00
Cut = 92 Fill = 0

SCALE 1" = 5'
STA. 350+50 TO 351+75

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	183-83 KA-5921-01	2021	50	50

SCALE 1" = 5'
STA. 352+00 TO 352+50